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The Nebraska State Medical Journal

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PERSONAL EXPERIENCE WITH SPINAL ANAESTHESIA*

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Sir Astley Cooper, in a series of lectures delivered over one hundred years ago, describes the following method of producing anesthesia for the reduction of a hip fracture:

"Bleed the patient to the extent of from twelve to twenty ounces or even more if he is very robust, then place him in a warm bath at a temperature of one hundred degrees and gradually increase the heat to one hundred ten degrees until he faints; and to accelerate the faintness give him one grain of tartar emetic every ten minutes until nausea is excited. When he is faint remove him from the bath, envelope him in blankets, place him between two strong posts about ten feet asunder in which two staples are fixed, etc."

In other cases whiskey was administered until the patient was drunk and refused to move when he was cuffed or kicked, it being felt then that the maximum amount of anesthesia with alcohol had been obtained.

These heroic efforts toward the production of anesthesia indicate a clear conception of the desirability of muscular relaxation and a good bit of ingenuity in obtaining it.

The history of chloroform and ether anesthesia is familiar to us all. The history of spinal anesthesia reveals the gradual development of the present day technique.

It is most distressing to have a death even from a perfectly natural cause under an unconventional anesthesia. I am aware of the professional and lay prejudice that exists against spinal anesthesia. I am convinced, however, that the dangers have been exaggerated and that many of the deaths that have taken place have been a result of ignorance of proper technique and of the class of cases in which it should be employed. Also, deaths have been attributed to spinal anesthesia in which the method was in no wise responsible but rather a result naturally to be expected from other factors.

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*Read in outline (and with slides) before the Nebraska State Medical Association, Omaha, May 14-16, 1929, and, also, at the meeting of the Missouri Valley Medical Association at Iowa City, September 29, 1929.

It is said that when Sir James Y. Simpson was about to employ chloroform for the first time in an operating theater in London, as he was approaching the operating table the bottle dropped from his hand, fell on the floor and the precious contents spilled. He then prepared to do the operation without anesthesia as usual and when the knife was placed upon the skin the patient took a deep breath and expired. Simpson thereupon very properly remarked that chloroform had been saved one death in England.

Unfortunately in the past it has been thought that spinal anesthesia consisted in injecting a solution of an anesthetic drug in the spinal dura and that the patient might then be operated upon with little if any further attention. The important factors, such as the point of injection, dosage, force and rapidity of injection, diffusion, concentration, specific gravity of the solution used and previous evacuation of the spinal fluid and position of the patient were given little consideration. The technique has now been carefully worked out. It necessitates a high degree of skill and a working knowledge of the physiological action of the anesthetic drug when placed within the dural sac. It appeals to the temperament of some surgeons but is entirely unsuited to others. Its indications and contra-indications are clearly defined and I believe it is a safe form of anesthesia if intelligently used.

That there will be deaths with even the most careful technique is inevitable. To the laity it is somewhat spectacular for the surgeon to be able to perform a major abdominal operation without pain and with the patient entirely conscious but the deaths are tragic because they occur so quickly and upon the operating table. I do not believe that the mortality under spinal anesthesia is higher than that under other forms of anesthesia when the various late complications costing life are considered. The difference lies in that a death under ether, nitrous oxide or ethelyene is blamed upon the drug and is accepted as an inevitable and well supported toll exacted for the relief of pain by anesthesia, but a death under spinal anesthesia is blamed upon the surgeon and at this time it is well to keep in mind that spinal anesthesia is not generally recognized by the profession as a safe or desirable procedure and the surgeon who uses it may invite criticism by his colleagues if a fatality occurs.

Spinal anesthesia or lumbar or rachi-anesthesia as it is sometimes called was introduced by Corning in 1881, who used cocaine which, naturally, proved very dangerous. Little further was done in the development of the method until 1904 when stovaine began to be used. This drug produces an excellent anesthesia but is toxic and to its use, with attendant fatalities, is due a large part of the disrepute into which spinal anesthesia, rather than the drug, fell. With the appearance of novocaine came a drug which can be, with reasonable safety, introduced into the dural sac and the technique has gradually developed since that time.

It is with a clear comprehension of these facts that I have cautiously, after an initial unfortunate experience eight years ago, returned to the use of spinal anesthesia. At that time I employed it for the removal of varicose veins. In my knowledge of the subsequent history of the patient which extended over about three months he did not regain ability to empty his bladder. I dismissed it then as a thoroughly undesirable method of producing anesthesia. Two years ago I spent several months in a large surgical clinic in Europe where spinal anesthesia was the method employed in all work below the diaphragm in all patients over twelve years of age. The technique employed differed considerably from that I use but was very satisfactory. The surgeon assured me that he has used spinal anesthesia by this method to the exclusion of all others since 1912 with only two deaths in any way attributable to the anesthesia in a clinic in which regularly five and six major abdominal operations with a high percentage of upper abdominal work were performed daily. The quiet, silent belly with the complete muscular relaxation and the facility with which exposure was obtained impressed itself thoroughly upon me and upon my return it was somewhat difficult to accustom myself to the moving gut and the more or less rigid belly wall.

There has been a great increase in the use of spinal anesthesia in America in the last two years. There is hardly a large clinic in the United States that had not tried it some years ago and discarded it after one or two fatalities and the fact that it is again being employed in the same clinics is testimony of the good features of the method after the technique is properly developed. The techniques as outlined in late literature are meticulous and one will find that they err on the side of safety which is proof that the proponents of the method are fearful that by wide employment in unskilled hands there will once again come a revulsion of feeling and a loss of what is a very desirable addition to our methods of surgical anesthesia.

THE ADVANTAGES OF SPINAL ANESTHESIA

These may be classified under three heads:

1. *Before Operation.* A. Entire assurance can be given the patient that the operation can be performed painlessly without loss of consciousness. B. In an emergency, spinal anesthesia can be given without the aid of a trained anesthetist. It should not be thought, however, that spinal anesthesia may be induced and the operation carried out without careful and trained observation of the patient's pulse, respiration and blood pressure either by a physician or a nurse accustomed to observing patients under spinal anesthesia. It sometimes happens that the patient's condition will be reported as good by a person untrained in observing the phenomena of spinal anesthesia when there is circulatory or respiratory collapse impending or already present.

ADVANTAGES OF SPINAL ANAESTHESIA

1. Before operation:
    (a) Assurance of no pain though conscious.
    (b) Emergencies can be met without skilled anaesthetists.
2. During operation:
    (a) Complete relaxation.
    (b) Absolute quiet belly.
    (c) Unparalleled exposure.
3. After operation:
    (a) Post operative shock minimized.
    (b) No metabolic disturbances.
    (c) Nausea, vomiting, gaseous distention and pain minimized.
    (d) Peristalsis stimulated and anal sphincter relaxed.

2. *During Operation.* The relaxation is more complete than can be obtained under even the deepest ether anesthesia. Intestinal coils drop away from the site of operation. Pelvic viscerae may be lifted out of the abdomen and the deepest nook and cranny of the abdominal cavity can be explored without difficulty.

3. *After the Operation.* A. Post operative shock is minimized since the afferent nerve fibers carrying impulses to the brain are blocked. B. There is little or no metabolic disturbance. One is able to do major operations in uremics or diabetics without precipitating a reaction such as is to be feared in ether anesthesia. C. Normal function of the kidneys, liver and intestines is only slightly, if at all, disturbed during the anesthesia. D. Violent nausea and vomiting and gastric and intestinal distention are usually absent. E. The small intestines are stimulated and the anal sphincter is relaxed, facilitating the passage of gas.

THE DISADVANTAGES OF SPINAL ANESTHESIA

A. Spinal anesthesia has no universal applicability nor for that matter has any other anesthetic method or agent. The limitations and contraindications must be carefully considered. A large part of the disrepute which spinal anesthesia has in the past been held has been due to ignorance of the proper technique and of the contraindications.

B. The patient is conscious. This, with certain races and certain temperaments, is a disadvantage. Personally, I have been able to largely eliminate this by proper preoperative medication. It is only rarely that psychic oblivion cannot be secured by proper preoperative morphine and scopolamine medication.

C. There is definite time limit to the anesthesia. Operations requiring more than an hour and one-half in the upper abdomen will require supplemental anesthesia and it is not practicable in any case, in my opinion, to reinject the patient. Operations in the lower abdominal cavity or in the lower extremities can be safely carried out if they do not exceed two hours or two and one-half hours in most cases. Spinal anesthesia is not satisfactory for the slow operator although if he uses it he will find that his work is greatly facilitated by the quietness of the patient and the complete muscular relaxation which is secured. There is no contraindication to supplementing spinal anesthesia with other types of general or local anesthesia. The only danger from spinal anesthesia is a collapse of blood pressure and nitrous oxide, ethylene and ether all raise blood pressure, the latter most of all.

DISADVANTAGES OF SPINAL ANAESTHESIA

1. No universal applicability.
2. Patient conscious—sometimes undesirable.
3. Definite time limit to the anaesthesia.
4. Possible post anaesthetic complications.
    (a) Persistent headache.
    (b) Ocular palsies.
    (c) Meningeal infection.

D. Persistent headache which sometimes follows the use of spinal anesthesia. In a rather large experience with this method of anesthesia I have had only a few patients who complained unusually of headache. I believe with the proper technique which embraces the use of the needles I will show, the elimination of sudden changes of position on the operating table and the elevation of the foot of the bed for twenty-four hours after the operation the headache can be largely, if not entirely, eliminated.

E. Ocular Palsies. I have had none. They are rare. They are, however, a serious complication for the diplopia which accompanies palsies is most disturbing, even though it always clears up spontaneously.

F. The Possibility of Meningeal Infection. This is small. It is possibly slightly greater than that of the ordinary lumbar tap since not only is fluid evacuated but another agent susceptible to contamination is injected. With proper technique it cannot, however, be considered a serious disadvantage.

G. The Possibility of Changes in the Cord as a Result of the Injection of the Anesthetic Agent. To some this has represented more than a disadvantage and has assumed the importance of a contraindication. To a slight extent, cocaine and to a great extent novocaine, over a period of years, have been used for spinal anesthesia. To my knowledge never in the two decades during which they have been used has there been reported any deleterious effect. It may be argued that solutions containing even minimal amounts of alcohol and strychnin as does Spinocain, when placed in direct contact with nerve tissues have a harmful effect early or late, but the action of all these agents upon the nerve protoplasm has been thoroughly studied and in the quantities employed, it being remembered that only a single dose is given, the objection seems hardly a valid one. I should fear much more the trauma from the insertion of the needle and the persistent headache that has been reported as a late effect from lumbar tap than the injection of the fluid.

CONTRAINDICATIONS

A. Myocardial Degeneration. I have hesitated to use spinal anesthesia in cases with advanced heart muscle disease. I believe that the sudden alteration in peripheral resistance that sometimes develops under spinal anesthesia and the removal of the sympathetic control of the heart muscle is undesirable. It has been argued, and it may be, that the blood pressure can be maintained or restored by ephedrin but in the few cases of heart muscle degeneration in which I have used spinal anesthesia with a drop in blood pressure the condition of the patient was not improved and was possibly aggravated by a second dose of ephedrin.

B. Extremely High Blood Pressure. From my personal experience this constitutes a contraindication to the use of spinal anesthesia though commonly it is considered an indication. High systolic pressure is apt to induce cardiac stress in a largely immobile circulatory tree. Sudden removal of peripheral resistance may be harmful.

C. Any marked involvement of the cerebrospinal nerve system such as brain tumor, intracranial and intraspinal hemorrhage, meningitis or syphilis, though one of my cases was a suppurative appendix in a tabetic in which a good recovery was made.

D. Any mechanical obstruction to or limitation of respiratory freedom. The vital capacity is always diminished in spinal anesthesia. In pulmonary tuberculosis there is no contraindication.

E. Extreme Hypotension. If this is due to shock there is a clear contraindication. I have operated upon cases with a preoperative systolic pressure of 100 who have gone through very nicely. In itself I do not believe hypotension is a contraindication.

F. Extremely Depressed Patients of Any Type. Those whose vital forces are already largely expended and in whom one would immediately fear the sudden alteration of vasomotor tone. It is true these cases are a poor risk for any type of anesthesia but I feel a volatile gas which can be much more quickly eliminated can be more safely used than an agent placed in the spinal canal.

G. Septicemia with Positive Blood Cultures. My records show two such cases. Both got along very well. One of them had, in addition to a septicemia, a marked myocardial degeneration. This case on the operating table worried me more than any other I have had and taught me that one cannot safely rely upon a second dose of ephedrin to overcome circulatory collapse. The danger of entering the spinal canal with a needle in a case of general septicemia must be apparent.

INDICATIONS

There are some surgical conditions in which spinal anesthesia is especially satisfactory. I will mention them briefly.

A. All Types of Pelvic Disease. With no

other form of anesthesia can such relaxation of the abdominal muscles or an orientation of the operative field and exposure of the pathology be obtained. With the light solution the danger is very small since the patient is in the Trendelenburg position.

CONTRAINDICATIONS

1. Marked myocardial degeneration.
2. Extreme hypertension.
3. Extreme hypotension.
4. Organic disease of central nervous system.
5. Extremely depressed patients of any type.
6. Septicaemia with positive blood culture.

INDICATIONS

1. Except in cases as outlined above.
2. Especially satisfactory in
   (a) All types of pelvic operations, male or female.
   (b) Intestinal obstruction.
   (c) Operative obstetrics.
   (d) All work on lower extremities.

B. Intestinal Obstruction. The complete relaxation obtained and the tendency for the gut to fall away from the belly wall and the exposure of the obstructing agent is remarkable. In my early experience with the anesthesia I had two perforated peptic ulcers in both of which spinal anesthesia was induced and convalescence was uneventful.

C. Operative Obstetrics. With this I have no experience but certainly spinal anesthesia has no deleterious effect upon the fetus. I do not believe that it will in any manner interfere with uterine contractions which are understood to be largely autonomic.. It is the ideal anesthesia in Caesarian sections.

D. In All Types of Amputations and Work upon the Lower Extremities in the Adult. By experience in reduction of fractures of the tibia, fibula and femur has demonstrated that the muscular relaxation secured is beyond all doubt much greater than that of other forms of anesthesia. In so far as the orthopedist's work lies below the pelvic brim it will for him be an ideal anesthesia for the time limit is much greater than in higher levels.

VARIOUS DRUGS USED

The relative toxicity of the drugs used in spinal anesthesia is established. One of the largest surgical clinics in the United States used apothesine until recently. The toxicity of novocaine is, however, less and its anesthetic action much more marked. There can hardly be any discussion as to the relative values of the various drugs now used.

TYPES OF SOLUTIONS USED

In general the solutions vary chiefly as to relative specific gravities, the object being to produce a fluid of the same, greater, or lesser specific gravity than the spinal fluid. The fluids are usually made hypotonic by the use of water or water plus alcohol. They are made isotonic by dissolving the agent in cerebrospinal fluid or normal saline. They are made hypertonic usually by the addition of glucose. It will be apparent that theoretically either hypotonic or hypertonic solutions can be moved in the fluid medium into which they are injected by changing the position of the patient. Thus a hypertonic solution can be kept in the lower limits of the dural sac by raising the head of the patient where as a hypotonic solution can be made to ascend in the same manner, allowing always for the normal curvature of the spinal canal. In general it may be said that the hypotonic or isotonic solutions are more satisfactory since it is desirable in marked drop in blood pressure to place the patient in the Trendelenburg position and such a maneuver in the presence of a hypertonic solution in the spinal canal would immediately move the solution toward the upper limits of the sac and toward the medulla. Pitkin's Spinocain is a solution made hypotonic by the addition of alcohol. Guanidin is added to limit the diffusibility and strychnin to accentuate the stimulative effect of the preanesthetic dose of ephedrin and thus overcome the drop in blood pressure. I believe that spinocain has certain advantages. I am not convinced that the addition of the strychnin and the guanidin is of any value and I believe that the solution has certain disadvantages, the chief one being that the appearance of the anesthesia is often much delayed without a corresponding increase in its duration.

TYPES OF SOLUTION USED

1. Isotonic solutions.
2. Hypertonic solutions.
3. Hypotonic solutions.

USE OF AGENTS TO MAINTAIN BLOOD PRESSURE

1. Ordinary stimulants of no value.
2. Adrenalin.
3. Ephedrin.

PRE-ANESTHETIC MEDICATION

In all types of anesthesia, particularly that in which consciousness is not lost the preliminary medication is, in my opinion, very important. In spinal anesthesia, if there is no contraindication other than that presented by the temperament of the patient, (and this may be a major one), it can be largely removed by proper pre-anesthetic medication. For many years I have in all forms of local or block anesthesia routinely administered pre-operatively morphine and scopolamine. I am well aware of the prejudice against the use of the latter drug but I believe this prejudice is a result of improper technique in its use. Routinely I use the Hoffman-LaRoche preparation in ampules. In a patient of average size one dose of one-fourth grain of morphine and one-hundredth grain of scopolamine are administered two and one-half hours pre-operatively and a second like dose administered one-half hour pre-operatively, making a total of one-half grain of morphine and one-fiftieth grain of scopolamine within two hours. After the first dose is administered the room is darkened, or if the patient is in a ward the bed is isolated by screens. The eyes are covered with a damp towel, the auditory canals plugged with cotton and no noise or disturbance allowed. The patients will usually come to the operating room soundly asleep or if not asleep, quiet, disoriented and with all apprehension removed. They have no recollection of the induction of the anesthesia nor of what has transpired in the operating room, very often. In some cases a much smaller dose is used and the patient remains wide awake. Never have I seen any ill effect from the use of the drug in this manner.. It is true that in a very small percentage of cases scopolamine does not quiet but rather excites the individual. This action represents an idiosyncrasy to the drug which can in no way be foretold or prevented but I have not found it to exist in a sufficiently large number of cases to in any way change my high opinion of the drug used pre-operatively. Never, however, do I administer either nitrous oxide or ethylene with a patient profoundly under morphine scopolamine narcosis. I think it is dangerous as there is sufficient respiratory depression to make the gas anaesthesia unsatisfactory and hazardous.

Ether in very small amounts is sufficient to complete the anesthesia if it is necessary. In some few cases I have given veronal the night previous to the operation. This secures rest in a nervous patient and it has been shown to be the antidote for the convulsive seizures of acute cocaine poisoning though I am not informed whether or not it has any effect in overcoming the toxicity of the novocaine which is very slight in any event.

STIMULANTS FOR MAINTAINING BLOOD PRESSURE

The pioneers in the use of spinal anesthesia early become aware of the fact that the chief danger in the procedure lay in the rapid and extreme drop in blood pressure due to vasomotor paralysis of the splanchnic area which is in no wise affected by strychnin or caffein, soda benzoate or other drugs sometimes used for raising the blood pressure. It was found that adrenalin, as might have been expected, was the most satisfactory agent to overcome splanchnic shock and to maintain the blood pressure. As ordinarily given, that is a five to fifteen minim dose, under the skin or in the vein, the action of the drug is very evanescent. Many workers, among them Babcock of Philadelphia, who has probably had more experience with spinal anesthesia than anyone in the United States, use an adrenalinized infusion. This prolongs the action of the adrenalin. More recently Evans of New York has employed a ten or fifteen minim dose of adrenalin given into the muscles where the blood supply is less profuse. The absorption is less rapid and the action more prolonged.

It is evident, however, that the action of any drug, if it be given under the skin, in the muscle or in the vein, must remain uncertain in urgent cases because of the poor absorption from the collapsed circulation. There can be little doubt that the introduction of ephedrin to prevent a fall in rather than to restore normal blood pressure has been a great aid in the development of a safe technique for spinal anesthesia. This drug has been in fairly wide spread use for about three and one-half years. It was first isolated by Nogai, a Japanese, in 1887 from a Chinese plant, Ma Huang. The chemical formula is similar to that of adrenalin. The action is much more prolonged, the solutions may be boiled and, hence, sterilization is easy. The drug does not deteriorate on exposure to light and air. As nearly as I know Ockerblad and Dillon were the first to use it in spinal anesthesia though they employed it after the fall in blood pressure had begun and not as a preliminary to the injection of the anesthetic fluid in the dural sac. Probably to Pitkin belongs the credit for first employing it routinely as a precaution against the fall in blood pressure. I do not have detailed knowledge of the pharmacological action of the drug. A moderate dose increases the cardiac output. A large dose, especially if there be any myocardial degeneration, causes depression and pulsus alternans. The advisability of a second dose of ephedrin in the presence of a fall in blood pressure is at least debatable. Sise of Boston, who had had a large experience in spinal anesthesia, has warned against it and my own experience in two cases has warned of the danger of repeating the dose.

TECHNIQUE OF INTRODUCTION

1. *Anesthetic.* In the series of cases presented here and upon which this discussion is based both Pitkin's Spinocain and Neocain dissolved in cerebro-spinal fluid were used with a preliminary interspinous injection of 2% novocaine and 5% ephedrin, the use of the novocain making the lumbar tap very nearly painless and the ephedrin in the novocain solution having a tendency to minimize and, in many cases, prevent the drop in blood pressure. These agents are supplied in boilable ampules, the sterilization of the solution thus being assured.

For the novocain ephedrin solution a 2 cc Luer-Lok syringe with a fine caliber hypodermic needle is employed. For the Spinocain, though the quantity of solution injected is never more than 2 cc, a 4 cc Luer-Lok syringe is employed. This permits aspiration and reinjection of the fluid as often as is desired and provides for dilution and diffusion of the agent which is necessary if high anesthesia is desired. For Neocain a 10 cc Luer-Lok syringe is employed.

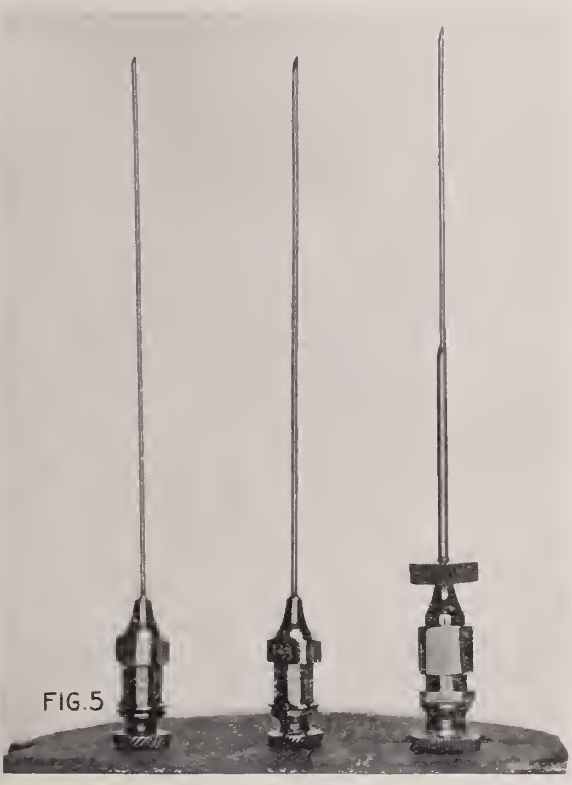

FIG.5

Fig. 5. Pitkin needle, ordinary spinal puncture needle and Sise needle with guide.

Originally I used a Pitkin needle which is also shown on the slide. It is very flexible, of small caliber with a short bevel as you will note. It is very satisfactory though difficult to introduce into the skin unless it be inserted through the puncture made previously by the injection of the novocain ephedrin solution. Pitkin maintains that the short bevel makes a trap door opening in the dura which closes readily when the needle is withdrawn, prevents leakage for the cerebrospinal fluid and thus minimizes the post anesthetic headache. Latterly I have used almost entirely the other needle shown on the slide which was devised by Sise and used at the Lahey Clinic in Boston. You will observe it has a round, smooth tip and is supplied with a removable guide. This guide is inserted between the spinous processes preliminarily and if properly placed infallibly directs the spinal needle into the dural sac. I have found it a great aid, especially in fat people or old people whose spines are more or less rigid and who usually have a good deal of osteoarthritis. With a little practice and the proper preliminary medication the anesthesia can be induced with practically no pain, little discomfort and often without the knowledge of the patient.

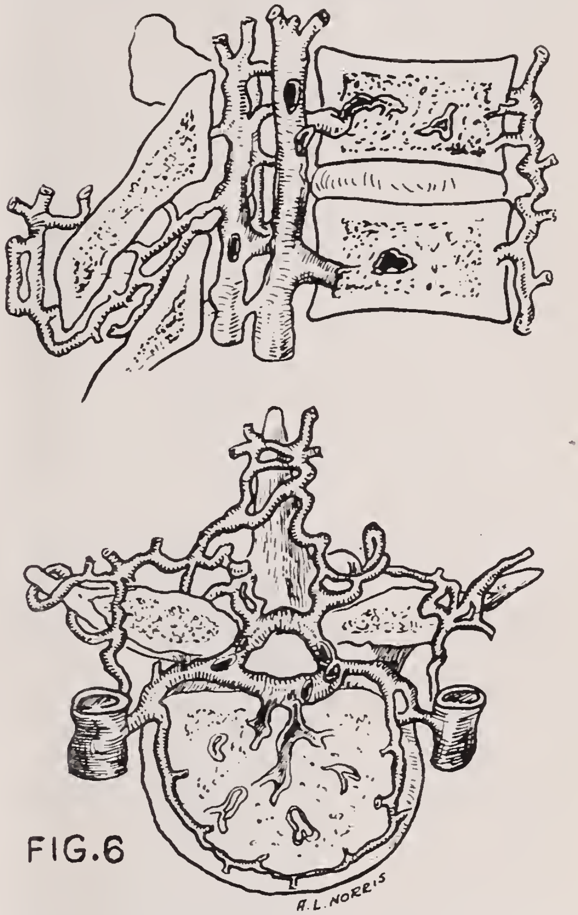

FIG.6

Fig. 6. An abundance of veins surrounds vertebrae which are apt to be encountered if lateral puncture is made or if needle is pushed too far anteriorly.

Position of Patient. This is most important. I believe that most satisfactory separation of the vertebrae and easiest introduction of the needle can be obtained with the patient in the sitting position. I believe, also, however, that it materially adds to the danger of the anesthesia though in hundreds of cases in which I have seen it used I have never observed any bad effect. Certainly the position should never be used when a hypotonic solution is employed and to do so is a violation of the most elementary rules for the safe application of the anesthesia for the solution may ascend to higher levels of the cord or to the medulla and death in a fair percentage of cases inevitably takes place.

I place the patient on the side. I do not believe it makes any difference upon which side, though theoretically, if the operation is to involve the right half of the abdomen the patient should lie upon the left side and the solution float on the right or upper level of the sac if a hypotonic solution is used. The slide will illustrate the necessary support of the loin. In the thin narrow hipped or in the fat male this may be eliminated but in the broad pelvised female it is essential. The patient is grasped about the neck and in the popliteal spaces with knees flexed by an assistant and an effort made to approximate the head to the knees as nearly as possible. This widens, of course, the inter-vertebral spaces and greatly facilitates the introduction of the needle.

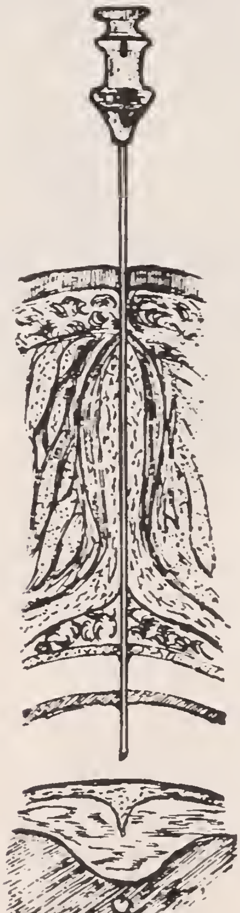

FIG.7

Fig. 7. Showing spinal needle inserted with point resting in subarachnoid cavity.

In rigid or in more or less immobile spines sometimes very little flexion or widening can be obtained and in hypersensitive individuals the insertion of the needle will bring about immediately an extension of the spine and add to the difficulty of inserting the needle. However, with a little practice dry taps are rarely secured.

(To be continued)

PROTOZOAL INFESTATIONS OF EX-SERVICE MEN IN MINNESOTA

One hundred sixty-two positive cases exhibiting 206 protozoal infections have been critically studied by William A. Riley, Minneapolis (*Journal A. M. A.*, May 18, 1929). Each patient was subjected to at least three examinations on successive days, if positive results were not secured earlier. This group included only those who exhibited gastro-intestinal neurasthenic or other symptoms which are believed to make a stool examination desirable. In ninety-five cases single infections were noted; in thirty-five cases two species were found; in seven there were triple infections, and in three, quadruple infections, Endameba coli, Endolimax nana, Chilomastix mesnili and Giardia lambia being found on the same slide. The data presented are said to justify the conclusion that Endameba histolytica is not only no more prevalent but is distinctly less common in the North Central states than might be inferred from current statistics, based largely on studies in the Southern states and California.

LOCAL DIATHERMY

M. H. Friedman, Chicago (*Journal A. M. A.*, May 18, 1929), made experiments on the influence of local diathermy on kidney secretion and on intramuscular and subcutaneous absorption. Using the method of Luckhardt and Koppanyi he was unable to show any effect of diathermy on the rate of absorption of subcutaneously injected epinephrine or on the rate of absorption of subcutaneously injected phenolsulphonephthalein, unless edema was produced. In that case there appeared to be a distinct retardation in the rate of absorption. Nor was he able to demonstrate any effect of diathermy on the rate of absorption of intramuscularly injected bismuth salts or on the rate of urine secretion.

PROGRESS OF SURGERY

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GASTRO-ENTEROLOGY

The value of x-ray as a diagnostic sign in perforation of a hollow abdominal viscus by showing air under the diaphragm, was first suggested in 1915 by Popper. Vaughan and Singer(1) report a series of 72 patients diagnosed perforated ulcer studied radiologically for pneumoperitoneum. Almost without exception every acute abdominal condition with a "free gas bubble" is a case of perforative peritonitis from rupture of a gas-containing viscus.

In a study of the effect of the gastric acidity in disease and after surgery of the stomach Elman(2) believes the important fact is not the degree of acidity produced by the stomach by a test meal, but is rather the rapidity and effectiveness with which acid, once secreted, is neutralized in the stomach. For this he removes the fasting secretion through a stomach tube and injects an acid test meal consisting of 300 cubic centimeters of 0.5 hydrochloric acid solution. Then 20 cubic centimeters are aspirated every 20 minutes and tested for acidity. He found pyloric stenosis caused much delay in neutralization, but that in these cases gastro-enterostomy results in a quite effective neutralization.

European and some American surgeons have been advising partial gastrectomy for peptic ulcer, as by removing the antrum of the stomach the second or chemical phase of gastric secretion is eliminated. In the service of Berg, it has been noted that in cases of very high acidity this operation fails to reduce the acid much. Klein(3) reports their work on this subject by section of the anterior trunk of the vagus near the cardia. This should eliminate the primary or psychic, and perhaps the continuous secretion. Berg did this operation of nerve section combined with partial gastrectomy on light cases. It resulted in gastric anacidity in all of these cases and at present all are free of symptoms.

Joyce(4) found that duodenal ulcers were multiple in seven out of fourteen cases in which a view of the lumen of the duodenum was obtained. For multiple ulcers of the duodenum he advises resection of the proximal part of the duodenum containing the ulcers. The resected portion includes the pyloric sphincter and the operation is completed by an end to end anastomosis. In reviewing the literature he found no reference to partial duodenectomy for multiple ulcers other than in two reports by Balfour.

Pope(5) carried out a series of experiments on dogs to determine if the standard clinical types of operations on the stomach would affect the emptying of the gallbladder which follows the ingestion of a fat meal. These operations were found to have no effect on the emptying of the gallbladder.

The experiments of Brams and Darnmacher(6) show that a more or less extensive inflammatory process can be produced in the gallbladder with a dose of x-rays commonly used for therapeutic purposes. The extent of the inflammation is dependent upon the dosage and reaches its maximum after a period of twelve days.

In acute appendicitis Wilkie(7) thinks we are operating earlier on the cases which would have recovered in any case and failing to recognize the dangerous and fatal type of case during its early and curable stage. He differentiates two primary and fundamentally different conditions: 1, acute inflammation of the wall which is acute appendicitis, and 2, acute obstruction of the lumen which as acute appendicular obstruction. The first type causes an acute illness, but is very rarely fatal; the second type is very dangerous and accounts for ninety per cent of the mortality from so-called appendicitis. If any portion of intestine containing fecal matter be completely closed at both ends putrefaction of the content will occur, leading to great tension and ultimately to gangrene and perforation of the loop. This is what happens if a concretion within the appendix becomes impacted in a stenosis or at a kink. Massive gangrene of the appendix is not due to thrombosis of the vessels in the mesoappendix. The gangrene is due to tension induced by the putrefactive content. The characteristic history is that suddenly and often during the night, there is cramping pain in the abdomen, usually in the umbilical or lower epigastric region and vomiting usually. The patient may writhe in pain from a few minutes to an hour. The pain then abates and may even almost completely disappear. There is now a clean tongue, a normal pulse and temperature, but may look a bit anxious. There may be just a suspicion of rigidity and tenderness in the right iliac region. If unoperated successive attacks of colicky pain will terminate in a sudden generalized pain and then relative comfort. The tense and gangrenous appendix has ruptured. The cases in which the need for operation is most pressing frequently show no fever during the first eight hours of the illness. It is the same in this regard as other forms of acute intestinal obstruction.

In the first type, i. e., acute inflammation of the appendix, the lumen may secondarily become occluded and sudden colicky pain supervene. This symptom makes immediate operation imperative.

The presence of human bile in the intestinal tract of dogs with intestinal obstruction caused them to live about twice as long as those not treated with bile, according to the experiments of Meyers and Rosenblatt(8). They do not explain the action. Brockman previously has felt that cases of paralytic ileus, clinically, were greatly benefitted by rectal injections of bile.

On nine dogs a suspension of graphite was given by stomach tube by Herrmann and Higgins(9). They found that the general permeability of the wall of the colon is not increased in obstruction, however, particulate matter may enter directly into the circulation and may be distributed by the portal blood stream.

In an experimental study, Cutting(10) concludes that the adrenal glands evidently serve a definite function in combating a toxemia produced by the infection of toxin so derived. The severity of the symptoms and signs of such a toxemia are a false guide to the prognosis in cases in which the adrenals cannot function.

Anderson and Rockwood(11) have found that in acute abdominal lesions with toxemia the blood chlorides are quite constantly decreased. This blood change appears earlier than changes in either carbon dioxide combining power of the blood or the non-protein nitrogen. Treatment of these cases with hypertonic sodium chloride solution intravenously has proven of immense value. In cases with a blood chloride below 260 milligrams in which chlorides were not given the mortality was 52 per cent, while those treated with chlorides had a mortality of only 22 per cent. The authors are not yet prepared to say whether it is better to delay operation for this treatment or of advantage to operate immediately and give the chlorides later.

GYNECOLOGY

As to the etiology of fibromyoma uteri and adenomyositis, Moench(12) disagrees with the "menstrual blood" theory of Sampson. He thinks, on the other hand, that these lesions are due to local congestion, causing increased follicular action of the ovaries with areas of local congestion in the uterus. He calls this the "theory of localized congestion and overactivity of the ovarian hormone."

Adler(13) gives the results of his tremendous experience with the Schanta operation for carcinoma of the cervix. This is a panhysterectomy by the vaginal route in which the ureters are dissected out and the parametrium removed with the uterus and adnexae. He claims to have cures equal to those of a Wertheim operation, which is the same radical operation by the abdominal route. The advantage, he says, of the vaginal route is the much lower mortality. In many cases where he suspects some carcinomatous tissue is left along the lateral pelvic walls he implants radium during the operation right at the place suspected. He does not use x-ray therapy unless the retroperitoneal abdominal lymph glands were diseased. In the last ten years the five year cures of operable cases were 58 per cent. The cures of all the cases, including the inoperable are 32 per cent. The mortality is now reduced to 3.8 per cent.

From fifteen years' experience in the use of radium in gynecological condition, Polak(14) makes the following conclusions:

1. Accuracy of diagnosis is essential and if there is doubt as to the diagnosis, operation is preferable to irradiation.

2. Highly neurotic or over-sexed individuals, or those with an unbalanced nervous system, should not be treated with radium, as irradiation produces atrophy of the vagina and cervix as well as atrophy of the ovaries, and is apt to accentuate all symptoms.

3. The occurrence of other intra-abdominal lesions requiring surgery makes it wiser to operate on many pelvic tumors than to employ radium therapy.

4. Very rapid growth of a pelvic tumor suggests malignancy of the uterus or ovary, and complete extirpation is preferable to irradiation.

5. Degenerating pelvic tumors should be removed by operation.

6. Pressure symptoms from large fibroid growths of the uterus are most quickly relieved by hysterectomy as tumor shrinkage from irradiation is variable and uncertain and may never occur.

7. Pelvic inflammatory lesions may become activated by radium and cause peritonitis and death—hence, in the presence of these lesions operation is indicated.

8. Large pelvic tumors, pedunculated subserous fibroids and large submucous growths require hysterectomy, particularly so if there is pressure on the bowel, ureter, or bladder, or when metrorrhagia is the prominent symptom.

9. Radium has proved its usefulness in the treatment of menorrhagia in young girls and in intractable cases of dysmenorrhoea without gross extra-uterine lesion. The amount of radiation should never exceed 300 milligram hours—repitition of the treatment may be necessary.

10. For myomata in young girls or in child bearing women under 35 years of age, myomectomy should be selected: While in multi-nodular growths with extensive involvement of the myomentrium, sub-total hysterectomy with the retention of an ovary and Fallopian tube should be the procedure of choice.

11. Extremely anaemic patients or women in whom the cachexia is out of proportion to the blood picture are bad radium risks. Operation gives better results, but all such operations should be preceded by blood transfusions.

12. In cases of malformation, faulty position, or cervical tumors in which uterine drainage is impaired, radium should not be used.

13. Parametrial exudative processes or adnexitis contraindicates the use of radium and, finally, careless and indiscriminate use may produce far-reaching damage. When radium is indicated for benign gynaecological conditions, the least amount of radium that will control the situation is the ideal.

UROLOGY

Hermann(15) found that in ten cases of carcinoma of the gastro-intestinal tract in the male, metastasis in the urinary bladder was found but once. In twelve cases of Krukenberg tumors, metastasis was found in the bladder six times. The ovaries seemed to play a determining role in directing metastasis formation to the pelvic organs. Bladder symptoms in cases of Krukenberg tumor are due to the carcinomatous infiltration of the bladder.

Alyea(16), in a complete review of the literature since 1800, finds only 23 authentic cases of traumatic dislocation of the testis. To this he adds the report of two cases observed at the Johns Hopkins Hospital. There are three anatomical varieties of dislocation of the testis: (1) The internal dislocation group—that in which the testis is in the inguinal canal (three cases), intra-abdominal (no cases); (2) the superficial dislocation group—that in which it does not pass through the external ring, but is forced into the following positions, superficial abdominal or pubic (6 cases), superficial inguinal (5 cases), penile (3 cases), perineal (2 cases), crural (1 case). (3) Compound dislocation, that in which there is a true herniation of testis through the scrotal wall (4 cases). In one case the position was not determined.

In only four cases was the testis restored to the scrotum without an open operation. All except one of the cases were cured.

MISCELLANEOUS

An excellent article on wound healing by Hertzler(17) disagrees with the old notion of primary wound healing by agglutination by a fibrinous exudate which in due time is resorbed and replaced by new fibrils formed by the fibroblasts. On the contrary, he believes the wound is agglutinated by fibrin fibrils which remain to form adult fibrous tissue and are not replaced by the product of fibroblasts. It is only when some condition exists which prevents the formation of fibrillar fibrin and instead glandular fibrin is deposited that it becomes necessary for the coagulum to be resorbed and be replaced by the product of fibroblasts. This latter is secondary healing.

We may have secondary healing without infection. Conditions leading to secondary healing are infection, interposition of fat which prevents coagulation of blood, action of necrotic substances, digestive ferments, constitutional conditions altering the coagulability of the blood, etc. Tissue exudates in edematous tissue permeate vessel walls and so changes the endothelium that fibrillar fibrin is not formed. As this is lacking in the clots formed they do not organize and so easily are dislodged to become emboli.

Permanent adhesions do not form in infected areas but where there is aseptic irritation, as by gauze. To get muscle healing the sutures should be tight so as to produce a fibrosing myositis.

To maintain drainage for a considerable time rubber is good as it inhibits coagulation of the wound exudate and so discourages the healing of the wound. When we drain a clean wound we do so to avoid the accumulation of exudate. The drainage material should favor coagulation. A gauze wick is best.

In a clinical study of complete body anaesthesia by spinal anaesthesia in over 750 cases, Koster and Kasman(18) have not met with serious respiratory or cardiac embarrassment. They showed experimentally in animals by applying the neocaine directly to the medulla that it affects the sensory nerves much more than the motor and so does not cause respiratory paralysis. In many the anaesthetic, using 250 milligrams of neocaine dissolved in 8 cubic centimeters of the patient's spinal fluid, affects the sensory roots of the upper portion of the cord as well as the bulb. In some cases it even produces sleep, in which the anaesthetic agent must have come into contact with the sensory cortex. There is loss of sensation of the entire body. Trendelenburg position is essential and if used there will never be a fatal anemia of the brain even if the blood pressure is reduced to zero. They consider hypotention no contraindication to the use of spinal anaesthesia.

By experimentally infecting varicose veins with lipiodol and observing it under the fluoroscope, McPheeters and Rice(19) believe that in all varicose veins of the lower extremities, the circulation is either stagnant or reversed. The chemically induced thrombus is forced distally toward the smaller and branching veins where it will most certainly be arrested. This explains the rarity of pulmonary emboli after the infection treatment of varicose veins.

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NEBRASKA'S PUBLIC HEALTH*

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In his inaugural address, President Hoover stated: "Many sections of our country and many groups of our citizens suffer from diseases the eradication of which are mere matters of administration and moderate expenditure. Public health service should be as fully organized and as universally incorporated into our governmental system as is public education." Some have attempted to interpret this language to mean governmental medicine. However, Governor Weaver anticipated any misconstruction concerning public health in Nebraska by stating in his message: "The state's work in health as embraced in the Welfare Department is not the treatment of disease, but an exercise of the state's police power for the prevention and control of disease." And further, in substance, administrative effort toward effective prevention and control, and with the objective of securing unified effort in the medical profession of the state for such a program.

Health is the foremost factor in human existence, but not so realized by the people to the point where of their own volition they endeavor to secure and maintain it. Individual health is the basis for collective or public health. What or where is the line of demarkation? It is that line placed through action or lack of action, not theory, by the medical profession. Some groups strive to place this line just as far into the field of medicine as possible and have produced some sharp angulations. One can progress scientifically and retrogress practically. Medicine has progressed, but in doing so has it not permitted or compelled other agencies to compete in leadership?

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The waiting policy has not prevented nor corrected the large per cent of physical defects that exist in our citizens. With close to 70% of our school children handicapped by physical defects, about 30% of persons of military age incapacitated for military duty, and over 60% of the men and women between 40 to 60 years of age requiring physical reparation (most of this situation due to preventable or remedial causes), does it not become apparent that this tremendous field of activity for constructive work demands action?

There is a vast difference between public health as a state function and public service as a medical profession sociologic problem. The exceptions are so clear-cut (certain classes of venereal diseases for example) as not open to question. However, the public service phase, in spite of altruism and philanthropy, should not through well intended but misguided effort longer endanger our sociologic structure by its definite encouragement and tendency toward pauperism. Pay clinics should be established by county medical societies to provide for those unable to employ a private physician.

As indicating a trend, permit us to quote a recent statement by the New York City Health Department: "What the Health Department Expects of Practitioners. The department of health believes that much of the work it does now can and ought to be done by the private practitioner. The work that remains to be done can be distributed so that the health officer and the practitioner each does his share. There are three important projects which physicians can immediately undertake: (1) the protection of children against diphtheria; (2) the examination of school children and the correction of defects found, and (3) the examination of persons exposed to tuberculosis by contact with cases. The department stands ready to entrust more preventive work to private practitioners. When that can be done to a larger extent, it can proceed with educational work to stimulate the public to avail itself of the service which the profession can give. The department believes that the physicians' point of view must change so that they consider themselves as 'quasi health officers', and that if they do not engage in preventive medicine some other agency will take away their opportunity."

The opportunity for leadership and guidance provided by personal contact from infancy to senility is so obvious that it is apparently overlooked. It supplies the means for doing invaluable preventive work and demonstrating that a physician's service is not in a bottle or package of pills.

Suffering may be not only alleviated but prevented to a large degree by the benefits and knowledge to be secured from an application of the greatest stride preventive medicine has made in recent years. We refer to the *periodic health examination*. Many people consider themselves sound after passing a life insurance examination and take pride in alluding to the matter. The periodic examination must be more thorough if it is to produce the results desired. First, the examiner must prepare himself to properly perform this definite function. Given a sound basic knowledge the preparation is not at all a formidable undertaking. Second, he must keep uppermost the objective which is of a dual character; i. e., preventive and corrective. Third, a clean, accurate, concise, utilizable record is indispensable. Fourth, the decision can be made only after careful consideration of all factors thus necessarily deliberate. Finally, the report and instructions, preferably in writing (copy retained), should be delivered in person with nothing capable of explanation unanswered.

The above can be conducted in a manner to produce definite results. It will instill a confidence desired by all, stimulate a real interest in personal and family health, produce greater recognition for scientific medicine than any combination of lectures, pictures, advertisements, or similar publicity. It is a sound, logical answer beyond contradiction to the untrained attempting to gain a recognition of equality.

Preventive measures are productive of best results when applied at the earliest moment. Many are applicable during pre-school period. Is it not wise for the physician to maintain close liaison with the family and initiate the steps which will remove the physical handicaps and defects of childhood? Physical examination prior to youth indulging in the more strenuous athletics is a definite life conservation measure. Each community should be educated to this requirement. Such initiatory activity provides the means whereby additional preventive measures can and should be instituted, thus expanding the important constructive field of periodic examinations.

There is no opposition of consequence to preventive medicine. However, there is and should be active, sustained opposition to certain methods of application. A reorganization involving methods should be an important function for this association.

Bureau of Health requirements of physicians are practically limited to reporting of certain diseases, understanding regulations concerning same, and proper completion of records such as birth and death certificates.

Statements based on regional surveys indicate that venereal disease is increasing in the past few years. If such is the fact in Nebraska, then it is a serious reflection on the profession, for reports received continue to show a proportional decline.

Due to invoking police power in control of communicable disease, there seems to be an antipathy upon the part of some physicians regarding reporting of notifiable disease or the suspicion of same because suspected cases require report. This attitude is extremely unfortunate and because of its potentially serious consequences has been classified by some as criminal carelessness and malpractice. Why a physician will attempt to assume police power, which he is not clothed with, by establishing and releasing from quarantine as though he were the board of health, is beyond understanding.

Every case of diphtheria, smallpox, or typhoid fever developing in Nebraska is a reflection on our profession as well as on our citizens. These diseases are preventable. No school child in Pittsburgh, Pa., has had smallpox for at least fifteen years. If the doctor can't or won't vaccinate against smallpox and immunize against diphtheria, shall government incur disaster by permitting the people to go unprotected? A pertinent question.

The problem of infant and maternal guidance which has caused a breach among those sincerely interested in this vital matter can be solved as it must eventually be through the cooperation of the medical profession. Officially we do not make provision for midwives, though some advocate licensing them. Better maternity care is a major problem with a closely related public health angle for the medical profession to display foresight and initiative in solving. Note a recent lay statement: "There are, comparatively speaking, few medical men who give prenatal and post-natal care and take into consideration the grave dangers of artificial interference during labor." The consideration of this question would justify a special session of the association.

The obstetric post-graduate course recently provided in this city was a valuable piece of public health work preventive in character. Proper work for the profession, not for the state department.

In Michigan an incomplete though careful survey to determine the cause of maternal deaths by the state health authorities and the medical profession reveals that more than one-half had had no prenatal care; that about one-fifth had medical care throughout the prenatal period. Septicemia was the predominant specific cause of fatality—about 43% of total. Albuminuria was the next most important cause—about 20%. Both regarded as preventable. Septicemia is the leading cause of maternal deaths in Nebraska.

In one city of medium size, not in Nebraska, one-sixth of the babies under one year old are under a public health nursing organization with a death rate in that one-sixth of less than one-fifth of the general death rate in the same age group in that city. Comparative figures are not available for Nebraska. However, this fact merits serious thought. If the maternal and infant mortality rates were as high in domestic animals as in humans, energetic steps to decrease the rate would be taken by the government.

Pregnancy is a normal condition. We know the value of and need for prenatal and maternal care, but the general public, and particularly the prospective mother, does not as yet realize the necessity to the extent of routinely seeking her physician as soon as she suspects pregnancy.

Women's organizations desire continuation of maternity and infancy work and expect same, but display willingness for a modified form.

Conferences on prenatal, maternal, infant, and child care can be made the means whereby a constructive public health organization may function. There is every reason for mutuality upon the part of the local physicians in conducting them, and no reasonable grounds for not participating. A move of this kind will meet with popular approval and secure hearty support.

A handbook, dealing with prenatal, post-natal, and child care, has been compiled by a committee of this association, and ordered in sufficient quantity to enable a copy being placed with every pregnant woman in Nebraska. Each physician will receive a copy as soon as they are available. The distribution should be through the family physician. However, until organization and education are perfected to render this practicable they will be sent upon request of interested individuals. This handbook, it is believed, will not only clear a befogged atmosphere but markedly aid in lowering mortality rates. It places responsibility upon the profession which heretofore has not been uniformly assumed. It encourages the pregnant woman and later the mother to consult her physician.

It has been stated repeatedly that quackery always has been practiced and always will be. Possibly true, but why accept the condition and supinely permit its unlimited continuation? The informed person recognizes in the ultimate that quackery produces much practice for the legitimate, competent physician. Is this fact not a challenge to utilize our most effective weapon, education? The air of mystery with which we have surrounded simple medical facts has been detrimental to public health. Much medical knowledge should become commonly known.

In view of the scientific knowledge we possess compared with that of B. C., one is disposed to contend we have drifted much in public health matters in spite of the achievements during the last half century. The Mosaic laws and teachings of Hippocrates, the father of medicine, if applied through unified effort, would produce remarkable results. Modern communicable disease regulations apparently are based on the laws of Moses. Hippocrates supplied a basis for education of the laity when he stated "The physician must not only be prepared to do what is right himself but also to make the patient, the attendants and the environment cooperate". "Make" is best achieved by education.

It has been stated that no public health department can perform more than 5% of the health work that should be done. The general public carries the burden of the remaining 95%. This implies organization to provide education. For any work of a public nature to succeed it must have popular approval. Therefore, it is proposed to request every civic or other organization of state-wide character or representation to send an authorized representative for participation in a conference. The objective is to form a State Public Health Council that will render active support in coordinating public health activities throughout the state and encourage the establishment of county health units. This effort will be conducted by the State Bureau of Health.

The county health unit plan is not new. It has been demonstrated as economically sound, practicable, and sufficiently elastic to be applicable in most of our counties. Many local health programs are now in effect but none completely coordinated. An important factor in coordination is activity by the medical profession. Apathy and indifference have to be overcome; effort and energy are prerequisites to success. Numerous conferences have convinced us that leadership is lacking. The county plan affords the profession an opportunity to exercise leadership as members of the coordinating body and basic organization.

Every resident of Nebraska should have the benefit of present knowledge of the causes and cure of disease. Much is being accomplished in health education by the public schools. The public activities committee of this association, having recognized the possibilities in the school field, has conducted a brief course in an effort to enlighten prospective teachers. This should be expanded. Some communities have and others desire school nurses. This important phase of work can well be part of coordinated county effort. Medical direction in all school health education is urgently needed.

Many of the sociological problems arising can be satisfactorily solved through county organizations. Constructive work benefits participants. Some communities are being faced with the fact that competent medical service must be made available for them. It is possible by organization for readjustments to be made whereby this can be supplied.

A county health unit operated under the direct leadership of the profession can establish health centers, hold demonstrations, advise as to preventive measures and communicable disease, also perform other valuable education work with a response that will be enlightening to the skeptical. Maternity and infancy work can be most effectively worked into such a plan. The only excuse for an outside agency going into your community and doing these things is that either you cannot or will not supply the service.

County organization details have no place in this paper. Let it suffice that we propose to actively assist in local organization by direct means and on the basis that the coordination can be practicable only through active participation of the medical profession, preferably the county medical society.

Nebraska is fortunate in having today, as in the past, a high type and capable medical personnel rendering invaluable service. Can this profession coordinate its efforts without sacrificing the individualization necessary in patient-physician contact? Believing so, we ask the cooperation of each member to actively participate in the development of the program with permanency in view. Your active functioning is the essence for efficient application in bringing the health of Nebraska's human element to its highest individual and collective point. If the plan merits support, then as Seth Parker said: "Let's not spoil it by talking about it, but go ahead and do it".

DISCUSSION

A. P. FITZSIMMONS, M. D., (Tecumseh): Our whole organization is wrong. Dr. Bartholomew may be doing great work, and he may be thinking he is at the head of the Health Department; but if you will go down to Cass county, you will see a sign, "Hampshire Hogs: E. M. Pollard." That is the man at the head of the Health and Welfare Department. Our county organization is in a similar position. Who is president of the county health department? The county sheriff. Who is secretary? The superintendent of schools. The doctor plays a minor part. That is the reason why nothing has been done along this line in the proper manner.

I have advocated for years that the secretary of the county society should have charge of the vital statistics and should be secretary of the county board of health. It would place the responsibility up to the medical department. The county board at the present time has one doctor, who has nothing to say about the case at all. The sheriff will tell you he is the one who wears the brass buttons. With such an organization, we can not hope to gain any great strides in the organization of the Health Department.

The army was in this condition thirty-five years ago, where the medical officer had no more to say than one of the mule drivers for the government. They saw their mistake and gave the medical department a separate unit, and you can see the progress made along those lines at the present time. We can not hope to gain anything until our Welfare Department is placed in the hands of a competent physician instead of a member of the legislature, and until our county boards are organized along the same lines.

B. F. BAILEY, M. D., (Lincoln): I have talked like this myself, but I wish to take issue with the last speaker a little bit. I am somewhat familiar with the organization of the Public Welfare Department. All over the country the trend is to put executives at the head of such departments. They are doing as they have done here—placing at the head a man who has practically full charge of it. It is his department and he is the head. Dr. Bartholomew has been placed in that position. I have spent a great deal of time this year in consultation with the Governor and Mr. Pollard. They fully recognize the rights and duties of the medical profession, and in placing Dr. Bartholomew there, they have put it up to us.

Mr. Pollard came into that position recognizing he had raised apples and been to Congress, but did not know much about the Department. He went into a careful study of the work. If you will be patient, I believe you will find the Public Welfare Department will develop, with a Health Department, under Dr. Bartholomew, that shall give to you all the ideals you seek. They have only made a start. They are ready to stand back of the medical profession. Let us stand back of this first opportunity to have what we have wished; to reach our ideal.

HERMAN M. JAHR, M. D., (Omaha): In connection with what Dr. Sage has pointed out, I am partly responsible for some of these figures. I was impressed with the perfect co-operation we received from the medical profession throughout the State. I want to take this opportunity to thank all of you who helped in gathering these figures. I do not believe we had any hesitation on the part of any physician to give perfectly frank information. He knew these figures were obtained not with the idea of reproach, but to have a definite study of what was going on in the way of maternal mortality in Nebraska.

I want to second Dr. Bailey's statement in regard to Mr. Pollard. I know definitely he is not only willing but anxious to have the full co-operation of the medical profession, and he has assured us that as far as he is concerned, he will do all in his power to help increase the facilities of the medical profession. I am sure he meant well. It is up to us to do what he wants us to do.

A. R. MITCHELL, M. D., (Lincoln): I am not here to solicit subscriptions. I am in full sympathy with the health programs. I should like to say to these health officers that a few years ago the trustees of the American Medical Association, at a considerable expense and no little criticism, established a Journal of Public Health, which is the best journal published in the world. I believe if our public health officers would indicate the necessity for public reading of HYGEIA, they would advance the cause of public health very materially.

H. M. McCLANAHAN, M. D., (Omaha): I only wish to speak of that part of the paper which pertains to mortality. I was glad to hear Dr. Mitchell say the mortality has been lowered chiefly by lowering of the death rate of infants. There are deaths among infants that cannot be prevented. Eleven per cent are due to some congenital defect over which we have no control.

It was my privilege to spend some time in New Zealand last winter. That island in the southern Pacific has the lowest infant mortality of any country in the world. I think I learned the reason: their care of the infant. Dr. Truby King has developed a method of infant feeding. They teach the mothers to nurse the infants. We know Dr. Sedgwick during his life told us ninety-five women out of one hundred can nurse their babies and the fault lies with the medical profession that the majority of them do not. There is no method of feeding equal to breast feeding. If the mother does not have enough breast milk, it is not sufficient excuse for weaning her baby. If a baby can not get all the milk from the mother, I will supplement it with some other form of feeding.

I visited their clinics. I went with the nurses and saw the babies. I want to call the attention of the health officer to one point: if a baby comes twice a week and is not doing well, that nurse refers it back to the doctor. There may be some reason for it. Some of the nurses are employed by the state and some by private enterprise. I have never seen babies in better physical condition than those in that little Island of only one and one-half million people.

DR. BARTHOLOMEW, (closing): I want to thank the gentlemen for discussing the paper. The object of the paper is to put it up to the medical profession whether or not they will co-operate.

With reference to the county or smaller organizations operating with boards of health, that proposition is one which can be altered. It is simply a matter of changing the law. It can be changed to provide for definite health officers rather than the present method, should it be deemed necessary. Because we may feel another type of organization ought to be formed is no reason why we should not cooperate with local boards of health in the respective communities as they are now constituted. When the opportunity is presented to you and your medical societies in your counties to organize a county health unit, we hope you will respond with a sufficient percentage so that we may go ahead with it. If the physicians in a particular county do not respond in a liberal manner, our organization will go into some other county and hope to return to your county. It is up to you in your own communities.

THE PRACTICAL APPLICATION OF THE GERSON-SAUERBRUCH DIET

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For many years no distinctive progress has been made in the management of tuberculosis. Innumerable remedies and cures have been enthusiastically recommended and have disappeared from the market under the searching light of scientific investigation. The failure of all such claims has been so consistent and decided that any advocate of a new cure for tuberculosis must be prepared, as a matter of course, for disbelief, denial and suspicion.

An extreme attitude of conservatism and cautious reserve has created a barrier of pessimism that has almost annihilated any vestige of hope for improved management and has prompted many physicians to seek escape from the responsibility of caring for these hopeless patients by banishing them to false lands of promise.

The strongest weapons that we possess in the fight against tuberculosis are the physical forces of fresh air and sunshine and the dietetic influences of highly nutritional foods. These alone have withstood the test of scientific scrutiny amid changing medical fashions.

A method of treatment of tuberculosis that offers a decisive forward step in increasing resistance against tuberculosis by altering metabolism through a dietary regimen should command attention. The theoretical possibilities exceed greatly those of the chemical and alleged immunizing remedies that have been recommended hitherto and have always led to disappointment.

The need for better management of tuberculosis is strikingly evident from the estimate of Alexander of the University of Michigan who stated that 30,000 victims of tuberculosis at a given time were certain of a tuberculous death unless better than the usual medical management was available.

HISTORICAL

In 1923 Hermannsdorfer, working under the direction of Ferdinand Sauerbruch of Munich, began a series of studies of the influence on tuberculosis of a dietary regime that had been used for some time by a general practitioner named Gerson of Bielefeld, Westphalia.

Sauerbruch had been impressed by cases that had come under his observation that had markedly improved under Gerson's management.

Gerson had no efficient hospital or laboratory facilities for scientific study. These were available in abundance in the Sauerbruch clinic and a special pavillion was set aside for experimental laboratory and therapeutic study. In 1925 Sauerbruch made a preliminary report to the Aertzlicher Verein of Munich. Their observations were summarized as follows:

"In lupus patients one occasionally sees signs of increased inflammation at the beginning of the course of treatment. Then follows progressive paling, drying up with scab formation, desquamation, shrinkage and scarring of the diseased skin. In some of our patients the foci disappeared except for relatively slight remnants. We have not been able as yet to see a complete removal of the affection, i. e., disappearance of the very last tubercle because the patients, satisfied with what has been achieved, have mostly broken off the cure prematurely.

In tuberculosis of the bones and soft parts the suppuration may at first increase; and it often varies in the course of the treatment until it is finally, with progressing cicatrization, completely overcome.

Lung patients nearly all gain very rapidly in weight, feel stronger and no longer tire so quickly. With an improvement in the lung-finding the expectoration may considerably diminish and lose its bacilli, also its purulent consistency gradually gives place to a more mucous-glossy appearance. Temperature and pulse fall quite gradually when the course is favorable. The skiagram sometimes shows fibrous shrinkage of diseased parts of the lungs.

All these improvements as a rule do not become visible until several weeks, often months, after the treatment has begun. Also, they only progress

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*Prepared by Miss Lita Lynch, Dietician, Lincoln General Hospital.

slowly, not seldom intermittently. Transitory exacerbations also occur. A strictly continuous improvement is, therefore, not always maintained.

There can, however, be no doubt that very gratifying improvement even in very severe tuberculosis can be obtained by exclusively dietetic treatment".

At this time Sauerbruch stated "The effect of the treatment is most obvious in external tuberculosis especially in the lupus patients". This statement has been distorted and repeatedly reiterated in its erroneous meaning that "The effect of the treatment is most *marked* in lupus cases". A careful examination of the early reports of Sauerbruch and Hermannsdorfer fails to reveal any stronger meaning in that statement. There is no justification that I can discover from the succession of reports that have come from them from 1925 to the present for the opinion that is given considerable credence in this country that the Gerson-Sauerbruch treatment is effective in external tuberculosis and not in pulmonary or bone and joint tuberculosis. To the contrary each of the many series of cases that they have reported during this period has contained a major portion of pulmonary and bone and joint cases and the results in them compare favorably with those of lupus. Naturally the improvement of the lesion in lupus being external and visible is more obvious.

The culmination of the series of studies beginning in 1923 and incorporated in a series of reports from 1925 to the present, so far as the conclusions of the Sauerbruch Clinic are concerned may be briefly set forth by quotations from Sauerbruch:

"There is no method known which would be so successful in influencing the severest cases of tuberculosis".

"This diet does actually produce extraordinary effects".

"New and enlarged foundations for a hopeful treatment of tuberculosis have been laid".

In July, 1929, before the medical association of Berlin, Sauerbruch voiced a continued and increasing confidence in the efficiency of the Gerson-Sauerbruch diet in the management of tuberculosis.

THE BASIS AND SCOPE OF THIS REPORT

The writer acquired familiarity with the Gerson-Sauerbruch management of tuberculosis in 1927 at the Y pavillion in Munich. Since September, 1927, a series of 37 cases under hospital management and of 18 cases in the home have come under observation. It has been necessary to study in great detail the practical application and the theoretical principles of the diet. Many problems of the dietary have been worked out with the cooperation of an efficient dietetic department. A brief report of this work was published in *The Nebraska State Medical Journal* of March, 1929. Since that time numerous inquiries have been received from sanatoriums for tuberculosis and others including one from the Research Sub-division of the United States Veterans Bureau. These inquiries testify to a wide interest in the Gerson-Sauerbruch management and a desire to investigate its merits. This article is intended to set forth the theoretic basis of the regime, the cardinal principles involved in its application and the rules and details for its practical application. Sufficient data has not as yet accumulated to make a valuable report on the results of treatment.

THE THEORETICAL BASIS OF THE GERSON-SAUERBRUCH DIET

Briefly it is the conviction of Gerson, Sauerbruch and Hermannsdorfer that the dietary program and mineralogen brings about an alteration in the blood chemistry and that as a result of the altered composition of the blood, a soil unfavorable to the growth of the tubercle bacillus is created. The diet is not planned nor intended to overnourish.

A super-abundance of vitamins is considered a valuable adjunct and this is supplied by including in the diet a surplus of fruit and fresh or little cooked vegetables and also cod-liver oil.

The alteration in blood chemistry is effected mainly by three factors in the program:

1. By the elimination of table salt.
2. By the administration of a mixture of salts called mineralogen.
3. By an unusual ratio of proteid, fat and carbohydrate which gives a relatively high fat and a low carbohydrate diet.

The two results that are thought to be accomplished in the alteration of metabolism by this regime of diet and mineralogen are:

1. A change in proportion of Kations and Ions with relative increase of the latter, i. e., a low blood alkali reserve and an increased acidity of the urine. (An acidifying action).
2. A disturbance in physiologic equilibrium of ions that results in a changed activity in the electrolytic system which in turn affects the function and activity of cells and tissues in a manner favorable to recovery from tuberculosis.

We might say there are at least three components of the diet:

1. Alteration of the blood chemistry.
2. A superabundance of vitamines.
3. An excess of minerals other than sodium administered as a mixture called mineralogen*, the formula of which follows:

Burnt Alum	ALK (SO)2
Calcium phosphate	$Ca\ HPO_4$
Sodium silicate	$Na_2\ Si\ O_3$
Magnesium sulphate	$Mg\ SO_4$
Bismuth subnitrate	$4\ BiO.\ NO_3\ BiO\ (OH)$
Calcium lactate	$(CH_3.\ CHOH.\ COO)_2Ca$
Strontium lactate	$(CH_3.\ CHOH.\ COO)_2Sr$
Albumin	$C_{72}H\ _{112}N_8\ So_{22}$
Sodium bisulphate	$Na\ HSO_4$
Sodium bromide	$Na\ Br$
Sodium sulphate	$Na\ SO_4$

PRACTICAL APPLICATION OF THE GERSON-SAUERBRUCH DIET

I. The Essential Features of the Diet:

1. The amount of food: The typical Gerson-Sauerbruch diet allowed 2700 calories per day. It is not considered necessary to over-nourish. Some variation is permissable and often necessary in the total daily calories. Sauerbruch considered 50 calories per kilo as ideal. In children or patients with low digestive ability lighter feeding may be necessary. If the tolerance to food is very good 3500 calories may be used.

2. The ratio of proteid, fat and carbohydrate: The ratio of protein 1.5, fat 2.7, carbohydrate 3.7, on a basis of grams is maintained without regard to the total calories. The ratio must be adhered to even when the feeding is light or heavy to insure a relatively high fat and a low carbohydrate diet.

The following table offers a ready reference to the number of grams and calories of each type of food in diets of variable total calories:

Calories	Pro. grams	Fat grams	Carbo. grams
2100	72	126	174
2400	81	144	198
2700	90	162	222
3000	99	180	246
3200	108	198	250
3500	117	216	274
3800	126	234	298

3. Alteration in mineral intake: All foods are served (NaCl) salt-free. No NaCl is added during cooking or after. Butter and bread are salt free. Canned goods must be of salt-free variety. The water should be salt-free.

Foods are prepared in steam cookers, little cooked and served in their own juices to preserve their natural mineral.

Mineralogen (mineral mixture) is given, a teaspoonful in water three times daily.

4. Foods preferred in the dietary: Milk and eggs are used freely. Milk can hardly be used in excess of 1 quart in diets of less than 3000 calories because of the difficulty of adjusting the remainder to attain the prescribed ratio of 1.5; 2.7; 3.7. In fuller diets 2 quarts may be given.

An abundance of fresh fruit and vegetables, raw or little cooked are desirable for their rich vitamine content. Only those foods are prohibited which contain an excess of salt such as salted meat, fish, pickles commercially canned, vegetables containing salt, etc. Fresh meat is restricted to 500 grams weekly. Lemon juice is substituted for vinegar.

Rich cakes and pastries cannot be used because of the excess of carbohydrate.

5. Weighing the food: It is as essential to weigh food for the Gerson-Sauerbruch diet as for diabetic diet. A Hanson or Chattilion gram scale with a moveable dial to obviate subtractions is desirable. Vegetables should be weighed after cooking. Bone, excess fat and gristle must be removed from meat before weighing. Foods that are not served in their own juices must be weighed after cooking.

II. The Meal Schedule:

7 a. m. Breakfast: Followed by mineralogen.
9 a. m. Nourishment.
12:30 Dinner: Followed by mineralogen.
4 p. m. Nourishment.
6:30 p. m. Supper: Followed by mineralogen.
8 p. m. Milk.

III. Method of calculating the diet:

1. Study the diet prescription which is for 3000 calories as follows: Protein, 99 grams; Fat, 180 grams; Carbohydrate, 246 grams.

2. Divide these figures by 3. One-third of the daily prescription should be taken in one meal and the nourishment which follows:

3. Consult the table of values for average servings of foods and plan a day's menu.

IV. Table of weights for average servings of foods.**

Wt. in grams	5% Vegetables	Avearge Serving	P	F	C
60	Asparagus—canned	5 tips—3-in. long	0	0	2
60	Beans, wax—canned	1-3 cup	0	0	2
30	Cabbage—raw	½ cup—shredded	0	0	1
70	Cabbage—cooked	½ cup	0	0	2
70	Cauliflower		0	0	2
35	Cucumber	5 slices	0	0	1
25	Celery—raw	2 pieces 4½-in. long	0	0	0

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*The mineral mixture that Sauerbruch calls mineralogen has never been published as a quantitative formula. Smith-Dorsey Co., of Lincoln, prepare the mineral mixture that I use.

**I am indebted to Miss Leta Lynch, Dietician at the Lincoln General Hospital for the diet tables.

50	Celery—cooked	¼ cup	0	0	2
50	Radishes	5 small	0	0	2
80	Spinach—canned	1-3 cup	1	0	3
80	Tomato—raw	Average serving	1	0	3
80	Tomato—canned	1-3 cup	1	0	3
40	Head lettuce	1-6 head	0	0	1
	10% Vegetables				
50	Beets	¼ cup diced fine	1	0	3
60	Carrots—cooked	1-3 cup cubed fine	1	0	4
40	Onions—raw		0	0	2
80	Onions—cooked		1	0	5
80	Squash	1-3 cup—mashed	1	0	5
80	Turnips	1-3 cup—mashed	1	0	5
30	Carrot—raw	¼ cup—ground	0	0	2
	15% and 15% Vegetables				
80	Peas—canned	1-3	1	0	12
70	Corn—canned	¼	1	0	14
100	Potato—boiled	1 medium size	2	0	20
60	Potato—mashed	1 serving No. 16 disher	1	0	12
100	Sweet Potato—boiled	1 medium potato	2	1	26
	10% Fruits				
80	Grapefruit	Average serving	1	0	8
40	Orange Petals	7 petals—size 216 orange	0	0	4
80	Orange Slices	5 slices—216 orange	1	0	8
60	Orange juice	juice one No. 216 orange	1	0	6
50	Lemon juice	juice one No. 300 lemon	1	0	5
70	Peach—canned	½ peach and juice	1	0	7
50	Pineapple—canned	1 ring No. 2 can	1	0	5
100	Cantaloupe	1-5 of 6 inch melon	1	0	10
	15% Fruits				
140	Apple—raw	1 apple 3-in. in diam.	1	0	21
120	Pear—fresh	1 pear size 160	1	0	18
40	Pear—canned	½ small pear	0	0	6
80	Apricots—canned	2 halves and juice	1	0	12
80	Royal Ann Cherries	10 cherries and juice	1	0	12
75	Concord Grapes	1 small bunch (25 grapes)	1	0	11
	20% Fruits				
130	Banana—raw	One banana in skin	1	0	26
	Cereals and Bread				
15	Uncooked Cereals	3-4 cereal bowl	2	1	10
105	Cooked Cereals	3-4 cereal bowl	2	1	10
25	Rice Krispies	3-4 cup	3	1	19
10	Puffed Wheat	3-4 cup	1	0	7
30	Post's Bran	2-3 cup	4	1	22
15	Cornflakes	2-3 cup	2	1	10
25	White Bread—pullman	1 slice ½-in.x3½-in.x3½-in.	2	0	13
6	Wheat Flour	1 tbsp	0	0	5
10	Cornstarch	1 tbsp	0	0	9
	Dairy Products				
108	Milk	3-4 cup	5	7	9
100	Milk	½ cup	3	20	5
100	Cream 40%	½ cup less 2 tbsp	2	40	3
25	American cheese	1x2x¼	7	9	0
70	Cottage cheese	1-3 cup	15	0	3
10	Butter	1 pat	0	9	0
10	Whipped Cream	Garnish for desserts	0	4	0
	Miscellaneous				
55	Egg	Large egg without shell	6	6	0
150	Broth	2-3 cup	2	1	0
6	Granulated Gelatin	1 tbsp	2	0	0
8	Powdered sugar	1 tbsp	0	0	6
5	English walnut meats	2 halves	1	3	1
10	Jello—dry	1 tbsp	2	0	0
8	Brown Sugar	1 tbsp	0	0	8
4	Granulated sugar	1 tsp	0	0	4
14	Cooked salad dressing	1 tbsp	0	13	0
12	French Dressing	1 tbsp	0	3	0
14	Mayonnaise	1 tbsp	0	13	0
	Meat and Fish				
20	Bacon—cooked	4 small slices	2	13	0
70	All meats and fish	Good serving	15	6	0

SAMPLE DAY'S MENU 3,000 CALORIES

BREAKFAST	gms. wt.	gms. P.	gms. F.	gms. C.
Sliced banana	60	1	0	12
Cream of wheat	15	2	1	10
Cream	80	2	10	4
Toast	25	2	0	13
Butter	11	0	10	0
Hot milk toast				
Milk	100	3	4	5
Toast	15	1	0	8
Butter	5	0	4	0
Milk	180	5	7	9
Cream	10	0	4	0
Coffee				
Sugar	15	0	0	15
		16	40	76
9 A. M.				
Orange Egg-nog				
Orange	80	1	0	8
Egg	1	6	6	0
Sugar	4	0	0	4
Water	11	0	0	0
		7	6	12
DINNER				
Fried chicken	80	18	3	0
Butter	15	0	3	0
Milk Gravy				
Flour	10	0	0	8
Milk	60	2	2	3
(Roll chicken in part of flour)				
Mashed potato	60	1	0	12
Cream	10	0	2	0
Butter	5	0	4	0
Peach Basket Salad				
Lettuce	10	0	0	0
Celery	5	0	0	0
Peach	20	1	0	8
Mayonnaise	5	0	4	0
Nuts	5	1	0	1
Creamed Cabbage	80	1	0	3
Cream	20	1	4	1
Butter	5	0	4	0
Bread	25	2	0	13
Butter	10	0	9	0
Milk	180	5	7	9
Ice Cream	60	2	6	9
		34	59	67
4 P. M.				
Egg-nog	140	4	6	7
Milk				
Egg	½	3	3	0
Sugar	4	0	0	4
Vanilla	0	0	0	0
		7	9	11
SUPPER				
Baked Potato Puff	80	2	0	16
Egg	½	3	3	0
Cream xx	5	0	2	0
Butter	4	0	3	0
Parsley				
Sandwich-lettuce	10	0	0	0
Bread	35	3	1	19
Butter	10	0	9	0
Mayonnaise	10	0	9	0
Chicken	40	8	6	0
Curled Celery	40	0	0	1
Salad-lettuce	10	0	0	0
Orange	30	0	0	3
Pear and Pineapple	60	1	0	9
Mayonnaise	5	0	4	0
Cream xx	5	0	2	0
Nuts	5	1	3	1
Carmel Custard				
Milk	80	2	3	4
Cream xx	10	0	4	0
Egg	½	3	3	0
Sugar	4	0	0	4
Vanilla				
Milk Shake				
Milk	180	5	7	9
Egg white	½	2	0	0
Sugar	5	0	0	5
		30	59	71
8 P. M.				
Milk	180	5	7	9
Totals for day		99	180	246

Doc's Son: "Pa, did you go to Sunday school when you was a boy?"

Doc: "Yes, my son, I always went to Sunday school."

Doc's Son: "Well, Dad, I think I'll quit going. It isn't doing me any good, either."

INTUSSUSCEPTION AND SOME OTHER SURGICAL CONDITIONS OF THE ABDOMEN IN CHILDREN*

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I have been asked to talk to you about intussusception and some of the other surgical conditions of the adbomen which occur in children. Ordinarily, it may seem that this topic is not very extensive as we usually do not associate the idea of abdominal disorders in children with surgical treatment. For the most part, of course, such conditions are usually seen by the pediatrician and general practitioner and are treated satisfactorily by medical means. However, although children, as you know, are subject to some of the same intra-abdominal surgical conditions that we find in adults, such as appendicitis and strangulated hernia, I wish to call your attention to the fact that there is a certain definite number of abnormal conditions of the abdomen which are essentially peculiar to children. Most of these are found along the gastro-intestinal tract and it is to this group that I wish to confine my remarks.

It is only natural that many of these disorders are congenital in character and are due to developmental defects which produce definite signs and symptoms in the early days of life. Starting at the stomach we may find a condition in which there is an obstruction to the outlet. It is probably present at birth and so has been termed congenital pyloric stenosis by Landerer in 1876.

There are only two or three references to this condition in the century preceding, the first in 1777. Our interest was attracted definitely by the excellent description of the pathology and clinical picture given by Hirschsprung in 1887 and 1888. Finkelstein in 1896 called attention to the presence of a palpable tumor. Since then a large number of observations have been made, but little has been added except in regard to the treatment.

Pathologically, the lesion consists of a change in the circular muscle layer of the pylorus. The fibers show a hypertrophy which produces a thickening of the muscle layer of two or three times the normal. The pyloric canal is narrowed often to such a degree that only a fine probe will pass but .never to complete obliteration. Within this narrowed canal the mucosa is forced to lie in folds but is otherwise unchanged. The serosa covering the pylorus is entirely normal. The stomach is distended and shows some muscle hypertrophy varying according to the duration and degree of obstruction. The associated pathological conditions are those produced by starvation.

Little is known of the pathogenesis but, as it has been found at birth and even in the foetus, it is probably a congenital hypertrophy primarily. However, there does not seem to be sufficient narrowing of the pyloric canal to produce the symptoms seen in infants. Associated with hypertrophy there is probably a certain degree of spasm. This is indicated by the fact that the baby usually shows no symptoms until the second to the fourth week of life, and subsequently may show periods of varying degrees of severity. The condition occurs in about one to every two hundred male infants and ten times as often in boys as in girls. In fifty per cent of the cases the first born is affected. Usually the children are breast fed.

The clinical picture is very definite and striking. Usually an apparently normal baby boy begins to show gastric trouble somewhere between the second and fourth weeks of life—practically never earlier and only occasionly later than that time. The first symptom is vomiting which has a forcible projectile character that is different from the usual regurgitation of indigestion. The vomitus is free from bile and usually consists of the entire feeding and some mucus. At times a feeding may be retained only to be vomited after the next feeding. The vomiting is unaccompanied by fever and the appetite is unimpaired, in fact that child often feeds eagerly right after vomiting. An inspection of the abdomen when the stomach is filled will show visible peristaltic waves passing across the upper abdomen from left to right. This sign appears a few days after the onset of the vomiting and is always present. Sometimes the outline of the stomach can be seen.

A careful palpation will usually reveal a tumor mass located a little to the right and just above the umbilicus. It is somewhat movable and about the size of a small olive. In some patients it is easily felt but more often it is only demonstrable after the stomach is emptied and the abdominal muscles relaxed. It is a most important sign and should always be exhibited. Often the tumor can be found only after a careful search by the experienced hand. It should be noted that the size of the tumor has no relation to the degree of obstruction. The clinical picture is filled in by constipation with starvation stools, loss of weight, and scanty urine, all of which are due to the vomiting. The loss of weight is the most important as it is a good index of the seriousness of the case.

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*Read before the Omaha Douglas County Medical Society, April 23, 1929.

The milder cases in which the vomiting is not constant and the body weight can be maintained or slightly increased, usually cease to vomit after ten to twelve weeks and apparently go on to a recovery. The more severe cases on the other hand lose weight rapidly and die of inanition in a few weeks.

I think the prime requisite in making a diagnosis in these cases is to have this condition in mind when examining infants with feeding disorders. The clinical picture, if looked for, is almost unmistakable. Some cases of protracted vomiting with indigestion may show peristaltic waves but they are usually small compared to those of pyloric stenosis, and no pyloric tumor is palpable. In pyloric spasm, likewise, no tumor can be felt and relief is given by the proper use of atropine. Occasionally we see a child with a congenital obstruction in the duodenum. In such cases the vomiting begins right after birth and consists of very large amounts of watery bile stained fluid. Here I would strongly suggest from my experience that you do not make a diagnosis of congenital pyloric stenosis if the symptoms begin in the first few days of life, as it is only in the rarest instances that the clinical picture starts before the second week. I would also advise against the use of x-ray in these cases as the diagnosis can be made at the bedside and the unnecessary strain of a floroscopy may be sufficient to turn the scale against these weak dehydrated babies.

In treating cases of congenital pyloric stenosis I think that there is today a fair agreement between the pediatricians and the surgeons. The milder cases can be carried along by thick cereal feedings and the use of atropine until they clear up after several weeks of careful nursing. If this plan of treatment is carried on it causes the permanent loss of breast feeding which should be carefully considered. In any event it is probably better not to persist in medical management if the child has lost more than twenty per cent of its maximum weight. Surgical treatment today can offer a mortality of two to five per cent dependent almost entirely on the condition of the child at the time of operation. The mother's breast milk can be preserved and the baby can be home under her care in ten or twelve days. For that reason I appeal to the pediatrician and the general practitioner, who always see these cases at first, not to withhold these patients from surgical treatment until they are moribund and dehydrated.

The preoperative treatment is very important and has been a definite factor in lowering the operative mortality. No emergency operations should be done. Instead the patient should be fortified by transfusions of saline containing three per cent of glucose. The effect of this is at once apparent and will often change a bad risk to a fairly good one. In addition, the body heat is conserved by the warmth of electric light, hot water bottles, etc.

Just before operation the stomach should be emptied by passing a tube. This deflates the stomach and makes the operation easier.

Operation: *Fredet Rammstedt*. The operation may be performed under general anesthesia but a local anesthetic is very satisfactory, although in some instances it may be necessary to give a few whiffs of ether while closing the abdominal wall. The local anesthetic is one-half per cent novocain which is injected well into the skin, fascia and peritoneum in the area to be incised. An incision about two inches long is then made in the middle of the rectus muscle from just below the costal arch to the umbilicus. It should be placed, if possible, so that it falls over the lower portion of the liver which will thus block the wound opening and prevent the escape of the abdominal contents. After opening the peritoneum the liver is hooked up, exposing the stomach wall. If this is picked up gently with a pair of tissue forceps the pylorus will come into view and can be pulled into the wound where it is held between the thumb and index finger of the left hand. Usually there is a somewhat avascular area on the anterior superior surface of the pylorous. A longitudinal incision is made in this area extending from the duodenum up on to the stomach. The incision is carried part way through the thickness of the pylorus and then deepened by inserting a sharp-nosed artery forceps and spreading the blades. This should be done until the submucosa herniates into the wound. Care should be taken to divide all the muscle fibres down to the duodenum, and at the same time avoid making a perforation at the duodenal junction where the wall suddenly becomes very thin. Any bleeding points should now be secured by under-running a fine ligature or tacking a bit of the rectus muscle over the spot. The pylorus is then replaced in the abdomen and the abdominal wall closed very carefully in layers by catgut sutures and skin silk.

To strengthen the closure it is well to put in two or three tension sutures of heavy silk. As the structures of the abdominal wall in these children are rather weak, every care should be taken to prevent the possibility of the wound breaking open. For this reason I usually encircle the abdomen with a soft roller bandage and strips of adhesive plaster.

Post operative care: This requires the able assistance of the medical associate who always handles this part of the treatment. In our clinics we have always tried to save the mother's milk. One hour after operation 15 cc of water is given followed in one hour by 4 cc of breast milk and 4 cc of barley water. This is repeated every two hours and gradually increased up to the child's requirements.

The results are dependent almost entirely on the duration of the condition and the amount of weight that has been lost. If the condition has not lasted more than four weeks and the child has not lost more than twenty per cent of its maximum weight, the mortality will not be over three per cent in experienced hands. The condition is permanently relieved by the operation as showed by many specimens removed years later.

Passing a little further down the alimentary tract we come to the place where the foregut and midgut of the embryo join. This is in the second portion of the duodenum just beyond the papilla of Vater. At this point union may fail and the result is two blind ends of bowel instead of a continuous tube. More often, however, the bowel is joined, but a septum extends across the lumen producing a stenosis. I have already alluded to the symptoms of this condition in speaking of the diagnosis of pyloric stenosis. The profuse and persistent, watery, bile stained vomitus beginning soon after birth is pathognomonic. As there is usually an atresia of the bowel below, anastomosis is ineffective.

In the lower ileum about twenty inches above the ileocecal valve, we may find the remains of another foetal structure, the vitello-intestinal duct, known as Meckel's diverticulum. It is really a persistence of the neck of the yolk sac. Ordinarily this foetal structure disappears about the seventh week of embryonic life but in two per cent of individuals some evidence of it is found in postnatal life. Often it is only a small pouch about the size of a thimble with a wall having the same coats as the bowel proper. It may undergo inflammation which may go on to gangrene. In such cases the clinical picture is almost identical with that of appendicitis except that the pain and localized tenderness are often nearer or to the left of the umbilicus. In other individuals Meckel's diverticulum may be only a small button-like structure in the wall of the ileum, sometimes cystic in charcter. In those cases it is often the starting point of an intussusception. In other instances the foetal duct degenerates into a fibrous cord extending from the ileum to the umbilicus. A loop of bowel will often get twisted around this cord and become strangulated. Occasionally, a portion of the duct leading down from the navel may persist as a mucus lined sinus which discharges constantly at the navel. Even more rarely, the entire tract from the bowel to the navel is present, in which cases fecal material is discharged on to the abdominal wall. Obviously Meckel's diverticulum must be thought of in every case of a discharging sinus at the naval.

As Meckel's diverticulum is lined with mucous membrane it may be the seat of an ulcer. There are no characteristic symptoms produced by this condition and it is usually unrecognized until the ulcer begins to bleed. Abt has reported several of these cases and the condition should be thought of in children, who are chronically ill, with bloody stools and some tenderness at the navel. If this condition is only kept in mind it will offer a diagnosis of some of the obscure cases of bleedng from the bowel in children. Surgically, Meckel's diverticulum is treated by excision or infolding.

And now let us consider what is probably the strangest and most interesting surgical condition that is found in the gastrointestinal tract of children. I refer to the acute type of intussusception. There is a chronic form of this condition that runs a long course with mild symptoms and does not tend to be fatal. It is easily differentiated from the severe acute form that I wish to consider.

Pathologically, we have a very clear picture of what takes place in the bowel. The process begins at some point usually in the region of the ileocecal valve. A proximal portion of the bowel called the intussusceptum invaginates into the part just distal to it called the intussuscipiens. The invaginating part proceeds distally dragging its mesentery containing the blood supply with it. The movement may extend for any distance, not infrequently to the rectum and may even pass the anal sphincter and protrude externally like a rectal prolapse. The shortness of the mesentery usually makes the intussusception curve in a semilunar shape across the abdomen.

The drag and pull on the mesentery causes an interference with the blood supply, especially to the head of the invaginating part. First venous stasis occurs with swelling and oedema. This in turn causes arterial blocking which leads to gangrene of the affected portion of the gut. Blood vessels become friable and rupture with hemorrhage into the lumen of the bowel. The end result is intestinal obstruction, peritonitis and death if not relieved.

The terminology is dependent on the part of the bowel involved. The enteric type includes those cases in which the invagination is limited to infolding of one portion of the small bowel into another. It comprises about ten per cent of all intussusceptions.

The ileocolic type takes in all cases in which the invagination begins in the small bowel and proceeds down through the ileocecal valve dragging this structure with the caecum and appendix after it. It comprises about forty-five per cent of all intussusceptions.

The ileocecal type is made up of those cases which start with an investigation of the ileocecal valve. The ileum, caecum and appendix are drawn along after the invaginating valve. This group includes about thirty-five per cent of all intusssusceptions. Finally we have the colic type in which a portion of the colon invaginates into another portion. It comprises about ten per cent of all intussusceptions. Occasionally an intussusception may invaginate again into a distal portion. This is spoken of as a compound intussusception. In rare instances a distal portion may invaginate into a proximal part producing what is known as a retrograde intussusception.

When we come to the etiology of intussusception our knowledge is not so definite. However, we have a few facts. Boys are affected twice as often as girls. A preceding or accompanying illness is not a factor for most of the patients are healthy children. The age incidence, however, is very striking. Fifty per cent of the cases occur between the ages of five and nine months, seventy per cent in the first year and eighty per cent of all cases occur in patients under two years of age.

Unfortunately we have only hypotheses to account for the causation of intussusception. One theory is that perverted peristalsis is to blame. That an intussusception can occur by that mechanism is well known to most surgeons who have seen it take place during a laparotomy but why should this perverted peristalsis limit itself almost entirely to the region of the ileocecal valve? Another theory is that a segment of bowel becomes paralyzed permitting the proximal bowel to prolapse into the paralized portion. Here again we are doubtful for there is no apparent reason why the region about the ileocecal valve should be more prone to paralysis than any other portion. In addition, this theory does not explain why this assumed paralysis affects only children under two years of age.

Of course it is well known that intussusceptions often begin at the site of some tumor in the bowel such as a pedunculated fibroma or lipoma or a Meckel's diverticulum. Most of these masses are like a foreign body which the bowel tries to expel and in doing so produces an intussusception. This is the causative factor in many of the enteric type of intussusception which, as I have stated comprises about ten per cent of all intussusceptions.

The ileocolic and ileocecal groups make up eighty per cent of intussusceptions—that is eighty per cent of all intussusceptions begin in the lower six or eight inches of the ileum or at the ileocecal valve. In practically all of these cases no apparent cause can be found for the intussusception. The best explanation that I know has been proposed by Perrin and Lindsay. They have pointed out that the region about the lower ileum in infants is densely studded with lymphoid tissue which forms a ring about the lumen of the bowel and extends down to the ileocecal valve but tends to disappear higher up in the ileum. The valve projects for about three-eights of an inch into the caecum. These anatomical conditions are most marked during the first year of life, less so during the second and gradually decrease with the advance of adult life. In other words, the degree to which these conditions are found varies directly with the incidence of intussusception. The lumen of the ileum is relatively small during the early years of life so that swelling of the lymphoid tissue might easily tend to block the bowel. This part would then be somewhat rigid and act like a foreign body starting an intussusception.

In regard to the colic type, Perrin and Linsay call attention to the small calibre of the colon in infancy when it is usually not much larger than the small gut. The mucosa is thrown in folds and heavily studded with small lymphoid follicles. An inflammatory swelling of these masses of lymphoid tissue would readily produce a swollen, stiff area that could start an intussusception. The factor that causes the inflammatory swelling of the Peyer's patches and lymphoid tissue is probably some gastro-intestinal disorder. Such slight upsets are very prone to occur during the teething period between five and nine months of age. This is the same period in which the greatest number of intussusceptions occur. It is also the time when the breast milk begins to fail and supplementary feeding begins. It would seem therefore, that this explanation would account for the great frequency of intussusception in the region of the ileocecal valve in infants between five and nine months of age and up through the second year of life.

The clinical picture is usually very definite. A healthy baby is attacked with a sudden abdominal pain evidenced by screaming, twisting and drawing up the legs. It soon becomes colicy in character with intermittent periods of relief when the child is apparently quite comfortable.

Vomiting occurs one or more times, usually at the height of the attacks of pain. The bowels may be absolutely constipated but often there are one or two movements containing fecal matter followed by the passage of variable amounts of blood and mucus, or pure blood.

An examination of the abdomen will show a complete relaxation of the wall through which it is easy to palpate a sausage shaped tumor that is apparently not tender. Sometimes the tumor cannot be felt until the child is anesthetized and even then a small tumor tucked up under the liver or spleen may be missed.

If the abdomen is inspected in a good light it is often possible to see visible peristaltic waves producing intestinal patterns on the abdominal wall.

A rectal examination will give most important findings and should always be made. In rare instances the head of the intussusception will be seen extending beyond the anus. In many instances it can be felt in the rectum. Practically all cases will show definite relaxation and loss of tone in the anal sphincter muscles and as the examining finger is withdrawn, it will be followed by passages of bloody mucus which look like currant jelly on the glove finger. I wish to call attention particularly to this sign as I regard it as practically pathagnomonic of intussus ception.

The diagnosis should offer little difficulty. Intussusception must be thought of in every case of bloody stools in children, especially in infants. Occasionally a purpura may show itself first by an intestinal hemmorrhage with a hematoma in the bowel wall that may stimulate the tumor of intussusception. In such cases the patients are usually not the robust subjects that we find in cases of intussusception. At times we may find that during epidemics of upper respiratory tract infections in children the patients may exhibit gastrointestinal symptoms with blood in the stools. These children are evidently sick with fever and other evidences of infection. I would strongly advise you to hesitate about making a diagnosis of an intussusception in a child in whom the signs appear in the course of some concurrent illness for again I repeat that it seems to attack healthy subjects. I think the x-ray has little place in making the diagnosis. It is unnecessary and requires an anesthetic. In addition, there is always some danger in giving an enema if any great pressure is used as the bowel may tear. In all doubtful cases I feel that an exploratory laporatomy is justifiable and the risk is not great.

The treatment has undergone considerable change as our knowledge of this condition has progressed. It is well known that an intussusception in some instances will unfold spontaneously. The early method of treatment consisted of measures designed to promote this unfolding process without opening the abdomen. Enemas of various kinds were given to stimulate the bowel to unfold. Often the enema was given with some pressure so that the hydrostatic force would push back the invaginating bowel. Air under pressure was also used by blowing air into the rectum and colon. At the same time the patient was put in various positions such as the knee elbow or knee chest. Other attempts to produce disinvagination were made by massaging the tumor through the abdominal wall while the patient was under an anesthetic. At times such measures were successful but as our knowledge of the pathology grew and we realized how friable the bowel often becomes in an intussusception, the danger of using such pressure methods in a blind way was at once apparent. In addition, it is impossible to be sure that the disinvagination has been complete when such blind methods are used. Today it is generally recognized that the safest and most efficient treatment is a laparotomy. As in all cases where strangulation of the bowel is impending, the operation should be done at the earliest possible moment after the diagnosis is made. Ether is probably the best anesthetic to use in these babies. Local anesthesia does not usually give sufficient relaxation to permit the necessary intra-abdominal manipulation. A longitudinal incision with its centre at the level of the navel is made through the right rectus muscle. The examining hand is introduced and the intussusception is located. At this point I use something suggested by Dr. Farr of New York. While the child is being anesthetized, an assistant introduces a catheter into the rectum and attaches the bulb of an ordinary blood pressure apparatus to the end of the catheter. Now guided by the hand in the abdomen the assistant is directed to distend the bowel with air. It is surprising how a little air pressure will easily move an invagination from the sigmoid over to the ascending colon where it can readily be manipulated in the laparotomy opening. The use of air pressure in this way is safe as it is done under the direction of a guarding hand in the abdomen. In addition, the small catheter in the rectum permits air to escape around it if the pressure gets at all great. The disinvagination is continued by the fingers milking back the head of the intussusception. For the most part this should be done in the abdomen so that the disinvaginated bowel is not exposed on the abdominal wall. Usually the disinvagination proceeds until the last inch or so of the intussusception is reached. Here the bowel is often found to be grayish black in color and tightly plastered together by a fibrinous exudate. Further pressure on the head of the intussusception will split the serosa and if persisted in, the bowel will tear. For the same reason it is most unwise to pull on the invaginating loop. At this point it may help to wrap the intussusception in two moist towels and press it firmly between the palms of the hands. This maneuver may express enough of the inflammatory fluid from the mass to permit complete unfolding. If one resects the mass and makes an anastomosis or simply drains the bowel by introducing a tube, the mortality in such cases is about one hundred per cent. Perhaps it would be best to bring the invaginated mass outside the abdomen and fix it there as in the Miczkuliz operation but the mortality rate will be very high. Here I wish to tell you something I tried in the last case I had of this kind in which I could not complete the disinvagination. It has been known that in rare instances the intussusception has cared for itself by sloughing off the invaginated portion down the bowel while the plastic exudate has prevented leakage and permitted nature to make an anastomosis. As my experience had been very bad with resection and like measures, I decided to hold the invagination in place by a few interrupted stitches about the neck. I then did a lateral anastomosis between the ileum and colon to prevent obstruction. The result was a perfect cure and so I am encouraged to try the operation on future cases.

It is probably unnecessary to take any steps in an operative way to prevent recurrence such as fixing the ileum and ascending colon together or sewing the caecum or ascending colon to the abdominal wall. Recurrence is very rare and it has been known to occur in spite of operative attempts to prevent it. We have no way of knowing that the second intussusception will occur in the same place as the primary one, so where the bowel can be completely disinvaginated it is best to stop and close the abdomen. If the bowel does not completely regain its color after applying hot towels it is probably best to take a chance on leaving it in the abdomen, knowing that resection offers such a bad outlook in babies.

From what I have said about the treatment it is at once evident that the mortality is dependent very largely on an early diagnosis and prompt operation. If these children are brought to operation before disinvagination becomes impossible the mortality will be about twenty per cent; in my experience it has been less than that. On the other hand if the diagnosis is made so late that the condition of the bowel at operation requires resection, the mortality will be close to one hundred per cent.

I have operated on forty cases of intussusception with a mortality of fifty per cent. That is about an average mortality. Some clinics have reported as high as eighty per cent. In other clinics where all of the cases reported have originated in a children's hospital and have been recognized early, a mortality of twenty per cent has been reported. Unfortunately some cases of intussusception develop a very high temperature, even up to 106 or 107, after operation. This is probably due to the absorption of toxic products from the bowel. It should be combatted by repeated stomach washings and high colonic irrigations with cold water to prevent death from hyperpyrexia.

In conclusion, I think it is evident to all of us, that our hope of saving these little children with surgical lesions of the gastro-intestinal tract rests very largely on an early diagnosis, so that they will come to operation in as good condition as possible and at a time when they can be relieved by the simplest operative procedure.

—122 So. Michigan Avenue.

A medical student was having a hard time with a written exam. One question was: "How would you induce a copious perspiration?" He answered: "Have the patient take a medical exam. in this college."

BILATERAL FRACTURES OF THE FEMUR*

H. F. JOHNSON, M. D.,
Omaha, Nebraska.

I wish to thank Doctors Murdock of Blair and Roeder of Omaha for the opportunity of handling this patient with fractures of both femurs. We have difficulty enough with one femur; when both are fractured the problem is truly a major one.

This young man is twenty-three years of age. On June 11th, 1928, while riding on a motorcycle, he struck an automobile coming in the opposite direction. As a result he was thrown forward striking each thigh against the handle bars. An open wound was produced over the anterior surface of the left thigh at its mid-third and both femurs were fractured. He was immediately brought to the hospital, the emergency treatment consisting of cleansing the lacerated wound with iodine and alcohol followed by the application of skin traction to both lower extremities.

X-ray examination revealed a transverse fracture of the middle third of the right femur with overriding of about three-fourths inch, the distal fragment being posterior and external. The left femur presented a slightly oblique fracture of the lower mid-third of the shaft with greater overriding than on the right.

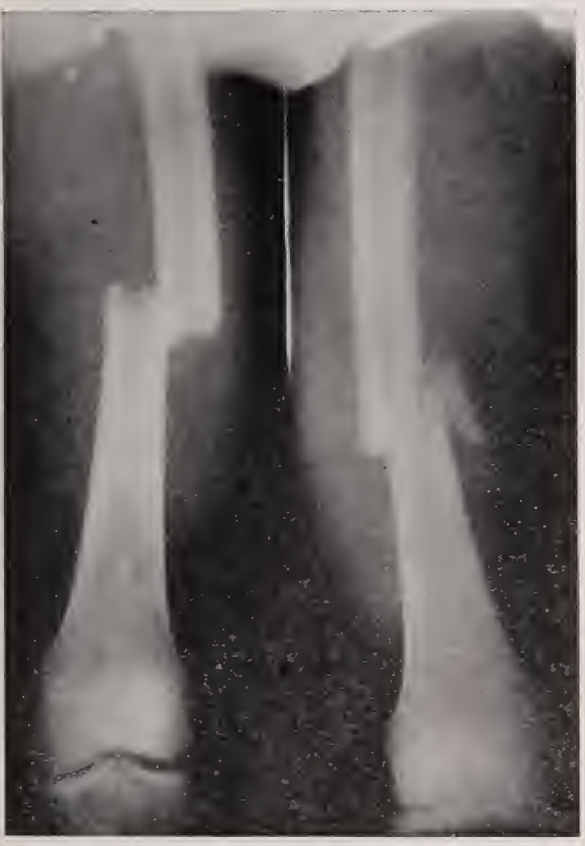

Fig. 1. X-ray film of femurs before reduction. Antero-posterior view.

We first saw him the morning following the injury as he was being prepared for reduction. As no fracture table was available, manual traction was used with complete general anesthesia. Skin traction was applied using very wide moleskin adhesive and fixation was maintained by molded splints reinforced by circular plaster bandages. This included the pelvis and down to just above the ankles. Thirty-two pounds traction was applied on the left limb and twenty-eight on the right. He was placed on a Bradford frame and suspended in bed.

Check-up films revealed the right satisfactory as to ailment with about one-fourth apposition. This would have given a satisfactory result but subsequent films disclosed that slipping had occured with overriding. The left was not satisfactory due to persistent overriding. In order to improve position, we attempted the use of pressure pads, a procedure which is used quite often but not very effective as necrosis of the soft tissues occurs before the pressure is great enough to slide the fragments over.

On June 18th, one week after injury, ice-tongs were applied on the left with the use of the knee flexion Thomas splint and twenty-four pounds traction. In order to get the distal fragment forward knee flexion of forty-five degrees was necessary. Later ice tongs were also applied to the right femur and on June 29th, three weeks after injury, check-up films revealed anatomic position and alinement on the right. This position was maintained throughout and eighteen pounds traction used which was gradually reduced until the ice tongs were removed six weeks later. On the left side, the slight external displacement of the lower fragment was constant but the lateral view disclosed very satisfactory alinement.

On August third the ice tongs were removed and plaster moulded splints applied including the pelvis. He was discharged from the hospital August 12th, and one month later permitted weight bearing on the right side. Due to delayed union of the left femur, a walking caliper was used over a period of three months.

Films taken eight months after injury revealed firm bony union on both sides and very satisfactory alignment but with some offset of the left femur as shown by the antero-posterior view. Measurements of the two limbs were the same.

He returned to work as a farmer ten months after injury and examination at this time, May 16, 1929, discloses no limp. The right knee has full range of motion while the left flexes through forty-five degres. Subsequent examination on July 22, two months since this presentation finds the left knee flexing to ninety degrees and he is carrying on full duty as a farmer.

This man has made a satisfactory recovery and should have very little if any permanent disability. Temporary total disability for his occupation as a farmer was ten months which in my opinion is not excessive considering the major injuries sustained.

DISCUSSION

J. P. LORD, M. D., (Omaha): I have been quite familiar with the work done by Dr. Johnson, and there are two or three points in general I wish to emphasize. I wish to corroborate what he says about the problem of cases with fractures in both femurs.

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*Presented to annual meeting Nebraska State Medical Association, Omaha, May 16, 1929.

It becomes an especially difficult problem when the case is two or three weeks old, after there has been much over-riding and a great deal of muscle contracture. To get an adequate amount of extension requires the ingenuity of a mechanical man.

For some years I have maintained the old alibi that in fractures of the femur anything from one to one and one-half inches was a good result, should not be our guide at the present time. With the old methods, some degree of shortening was the rule. It has been my contention with ice-tong traction properly adapted, there need be no shortening. Over-lengthening is entirely possible. I was so zealous carrying out my teaching in the matter, the first thing I knew I had three cases in which the legs were longer than the normal ones.

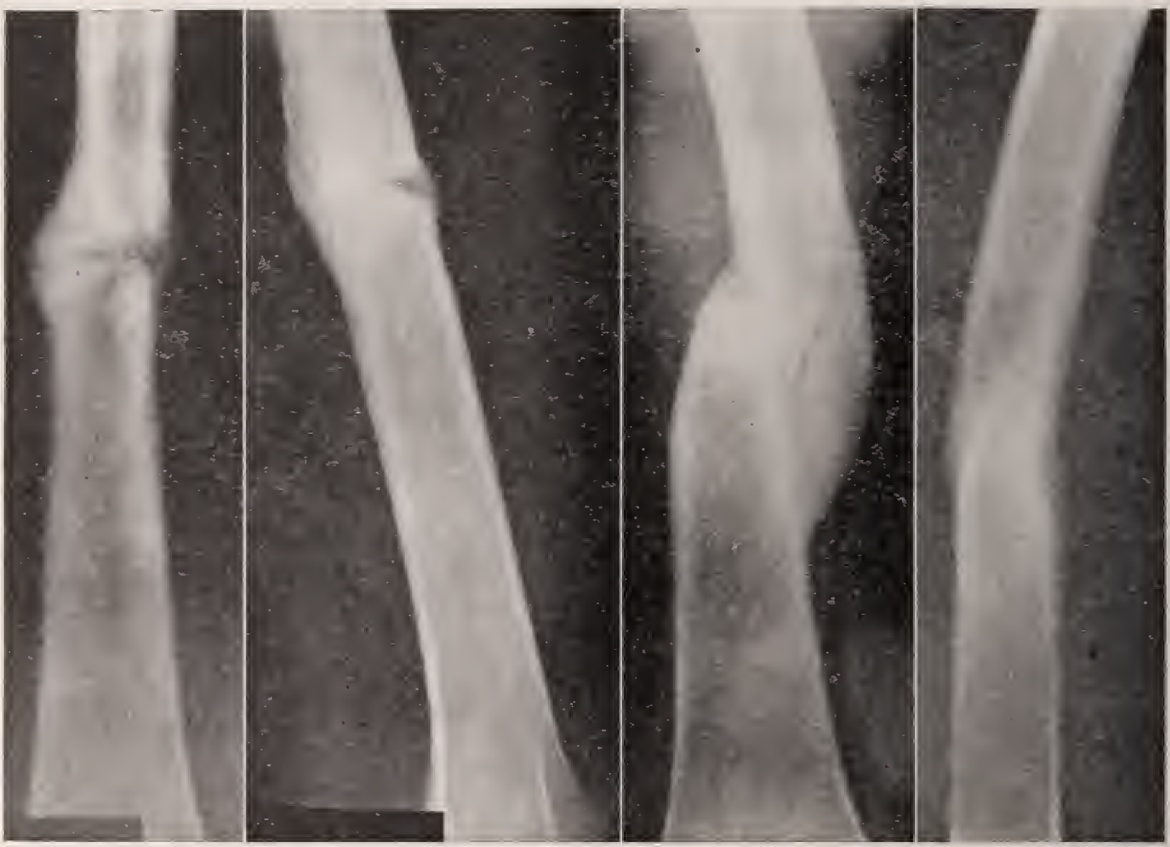

Fig. 2. Checkup films six months after reduction.

One of the things I wish to commend to your practice is ice-tong traction. It has not gone broadcast so that it is not generally used. It is a very simple thing. A little novocain, a nick with the scalpel, the setting of the prongs into the condyle, a tap with the hammer, screw up the fixation device, and you have a position that need give no trouble from first to last. We would commend to our country brethren to treat their thigh fractures with ice tongs. Adhesive traction will not deliver the results you are seeking.

W. L. SUCHA, M. D., (Omaha): I wish to compliment Dr. Johnson on the wonderful result he obtained in this case of double fracture of the femur. I am confident he could not have obtained it by any other method—even by open reduction. He had a compound fracture on which he could not have used open reduction without trouble.

I wish to emphasize what Dr. Lord said about the more frequent use of ice tongs. I know of no other method by which you can handle a fracture of the lower end of the femur. You can not get enough skin traction. You must have a flexed knee. You can not get twenty-eight pounds of skin traction on four inches of skin. You can not leave the leg straight because your lower fragment will set retrodisplaced. With the ice tongs he has perfect control. When it was not just where he thought it ought to be, he flexed the knee a little more and brought his fragment a little higher. There is no limitation. There is nothing to stop him. There is no other way he

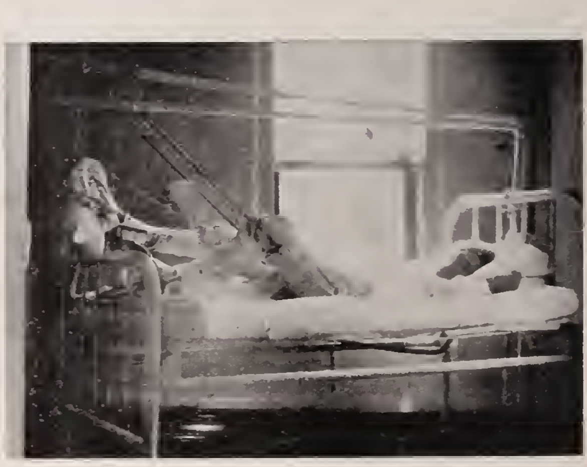

Fig. 3 Photograph of patient in bed with ice tongs and Thomas splint suspension.

can get his length. He can even control the side traction.

I was glad to hear Dr. Johnson say what he did about compression pads. He used them and apologized for it. It would be a mistake to give the impression that a compression pad was a safe thing to use. Any time you put enough push on the soft tissues to control a fractured limb, you are courting danger.

There is another place ice tongs are almost indispensable, and that is in comminuted fractures of the lower end of the tibia. I think Dr. Lord's teaching is bound to bear fruit and men will be using more skeletal traction and doing less open reduction. You can always get length. If you can get length, you can probably get alignment. If you do not, you can not. If we can avoid open operation, that is what we want to do.

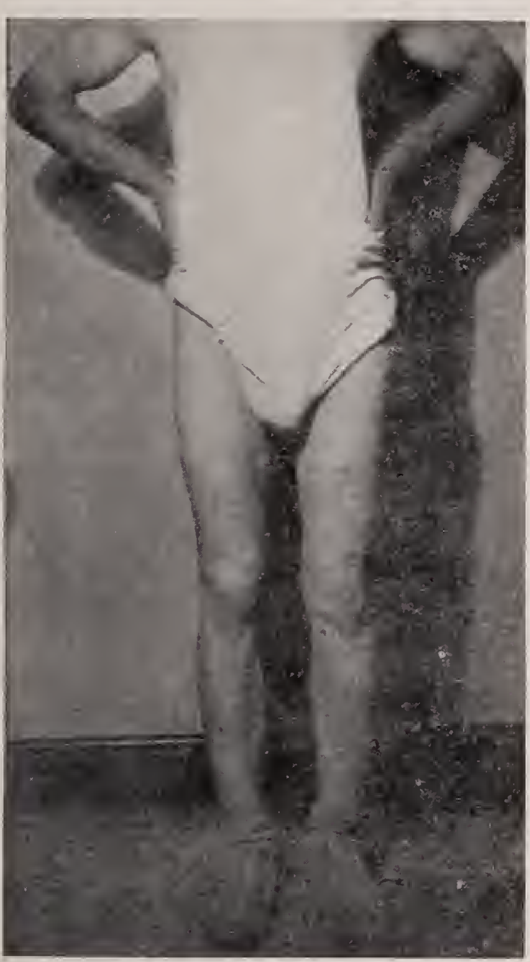

Fig. 4. Patient ten months after fracture.

In these fractures of the lower end of the femur, I do not know of any other method of avoiding it. Dr. Johnson put on thirty pounds. You can not get it on adhesive or hold the skin. Skeletal traction is bound to come into more extensive use if we are going to get the results to which our patients are entitled with the methods now at hand. They are entitled to something better than an inch of shortening. They will get full length if you put on enough traction. Some will be a little longer, particularly in children. A child with a fractured femur and perfect apposition will in practically all instances get from one-half to three-fourths inch lengthening. Probably the trauma stimulates the epiphysis. They level up with full growth.

J. R. NILSSON, M. D., (Omaha): I am glad to hear Drs. Johnson and Lord bring out this thought about traction. In our hospital we use it routinely. The first thing when a fractured femur case presents itself, we x-ray it and put in the tongs at once, usually starting with thirty-five pounds. We ray in forty-eight hours, and get up to as high as sixty pounds. Once in a while you must use a hypodermic of morphine. In forty-eight hours we put them in Thomas splints. I use the same method. I paint the skin with mercurochrome and use one per cent novocain. I wrap the tongs. I have never seen infection from using tongs.

ROBERT SCHROCK, M. D., (Omaha): There are disasters in ice-tong traction. Fortunately, we have not run onto them here. I have seen suppurative arthritis and sinus formation existing at the site of the ice-tong insertion for a period of over a year.

Dr. Johnson tried religiously to stay away from the more radical use. They are simple if one recognizes the cleanliness necessary and points of application also. If he possesses enough mechanics to know what to do with the machine he has inserted into that femur, it is a simple procedure and a conservative intermediate method between a poor result and good results by open operation. Open operation is serious. It does present possibilities of very distinct danger, where proper attention is not paid to asepsis and insertion of the tongs.

DR. JOHNSON, (closing): I wish to thank the gentlemen for the discussion.

Dr. Schrock brings out the important thing—the problem of skin preparation. I did not put in ice tongs without forty-eight hours' preparation. It is a safety device which makes it less dangerous. You can get ostomyelitis of the lower femur or suppurative arthritis of the knee. Occasionally we have seen them used without even a Thomas splint. You must have your suspension apparatus so that the patient has fixation as well as traction.

I want to give a little warning against the too general use of ice-tong traction. It is contraindicated in compound fracture of the lower femur with definite evidence of infection. We have seen such a case where they had to be removed on account of the active infection which followed. They should be used with the same asepsis as if we were going in to do an open reduction.

TREATMENT OF VARICOSE VEINS OF THE LEGS

A survey of a series of 4,607 cases made by Norman J. Kilbourne, Los Angeles (*Journal A. M. A.*, April 20, 1929), shows positively that the mortality by operative excision of varicose veins in America is one in 250. The mortality by injection cannot be so accurately determined; but a study of 50,000 cases shows that it is less than one in 4,000. Recurrences after operation average 30 per cent, and after injection 6 per cent. Although embolism, phebitis, ulcer formation and gangrene are rare, no injection should be made until they have been prevented by thorough preliminary study.

STATIC BACKACHE

ROBERT D. SCHROCK, M. D.,
Omaha, Nebr.

Many medical men, together with electrical engineers, ministers, bankers and school boys, have struggled through the intracacies of the early crystal set with headphones, the varied hook-ups of the neutrodyne and super-heterodyne. The radio-minded have experimented with individual methods, and more recently using combined efforts at legal elimination, the air has been somewhat cleared of disturbing interference. The intangible and pleasure destroying "static" is still productive of auditory pain. "STATIC BACKACHE" still remains a problem in physiologic dynamics.

In a recent visit to a Dresden clinic, we were puzzled at notations made by an outstanding German orthopedist. His tentative diagnosis on painful back and foot conditions were "sufficient" and "insufficient". We were disappointed to find on later charts, the detailed causes of these "insufficiencies" not worked out. The generalizations are hardly adequate.

In 1927, a commission of The Clinical Orthopedic Society by questionnaire, made a survey on "backache". On the first seven causes, there were 298 answers; there were twelve other causes with 66 answers. The first three causes, arthritis, strain and posture, were almost equally frequent. The next two causes, congenital anomalies and trauma, dropped about 10 points in frequence. The next two causes, infection and pelvic disorders, dropped to about one-half of the first three causes.

PART I.

Eight questions were asked. The answers to these in tabulated form are as follows:—

Question I. In your opinion what are the causes of back pain?

This question elicited the largest number of answers. These are shown in Table I.

TABLE I.

Arthritis	58	Spondylolisthesis	7
Strain	51	Underdevelopment	7
Posture	50	Abdominal	7
Congenital anomalies	43	Flat-foot	5
Trauma	40	Fracture	3
Infection	28	Exposure	2
Pelvic	28	Constipation spasticity	2
Fibrositis	12	Auto driving	1
Varied	10	Luxations	1
Genito-urinary conditions	9		

In the first six causes there is a certain inter-relation; if more than one factor be present, the combined factors then become synergistic in producing pathology and the resulting symptoms. The inter-relation of trauma and the congenital anomolies has been discussed repeatedly.

To the traumatized back, if now be added the element of infection productive of an arthritis, the clinical problem becomes far more complicated. The early diagnosis of arthritis of the spine is made difficult by the insidious onset, the depth of the lesion, the multiplicity of the joints, the variation of referred pains and lack of intimate knowledge of the anatomic structures. Increased tonus or spasm of abdominal muscles means to the doctor, intra-abdominal irritation. The same pathologic physiology applies to the juxta-spinal muscles. An irritable erector spinae, quadratus lumborum or ilio-psoas is a protective response. The lesion is less frequently in the muscles than in the deeper structures. The symptomatic diagnosis of lumbago or sciatica is inadequate. The all-inclusive diagnosis of "rheumatism" is not modern medicine.

Early attention to building up the patient's general resistance is the prime necessity. Removal of the mechanical strain for symptomatic relief is a valuable adjuvant, as this promotes the possibility of rest through decrease of pain. The removal of demonstrable foci of infection is mandatory. The suspicious foci of infection are handled step by step as clinical progress indicates. Lack of progress means failure to have eradicated the cause.

The localization and eradication of these foci is the combined work of all departments of medicine and surgery. The offending T's—tonsils, teeth and tract of the intestine, are the first suspects. The tract of the intestine includes its appendages, the gall-bladder, appendix, etc. The low gut is a repository from which is absorbed much of too many decomposition products, both bacterial and chemical. Constipation is frequently falsely denied. In most cases, constipation is the result of carelessness in habit-formation. Constipation will aggravate a backache from any cause. Fissures, fistulae, haemorrhoids and local sacculations are contributory factors of prime importance.

An increasing proportion of the human race is being bothered by an intangible and indefinitely localized interference with the function of their low back regions. The past two generations have been particularly relieved of the necessity of much back work and foot work. Head work of an inventive type has developed mechanical means of accomplishing burdensome tasks and transporting people from place to place without expenditure of the former amout of physical effort. Electric washers and vacuum sweepers have replaced the wash board and broom. The self regulating oil furnaces have removed the necessity for the use of the grandfather's axe and cross-cut saw. We purchase the more economical labor saving devices and are fast becoming riders rather than walkers. For this "ease of living" the human frame is paying a certain price.

Disuse begets atrophy. There is being developed a decreased muscular and ligamentous efficiency in those structures which support our frames, making the human machine less resistant to physical stress and strain. This is consciously recognized by those groups of women and men becoming more interested in out of door activities and in gymnasium work. In 1916 the lawyer, the clerk and even the doctor was put through a period of training to adjust himself to a new occupation; the greater part of his training was for physical hardening to enable him to "carry on" over many miles and with unusual loads . The foundation for that physical redevelopment was present and found to be dependable. Not many will fail to recall rather vividly the foot, leg and backache of the first week to ten days. Standing at "Attention" for 15 minutes was more painful than an hour's march. Relief of pain was sought unconsciously in "bunk fatigue". These aches diminished in proportion to sufficient redevelopment of supporting musculature.

The human frame is poorly adapted mechanically to its erect position. The jointed segments of its structure are maintained in position by coordinated elastic guy ropes constantly changing tension in response to the demands of the organs and center of equilibrium. Where tension is too prolonged, muscle fatigue takes place. Muscle fatigue gives rise to discomfort and pain, dull aching in character, relieved by rest. If the fatigue be marked, pain may be sharp, spasmodic and cramp-like. Muscles contracted for a period of time go into a state of contracture and develop structural shortening; fibrosis occurs in proportion to the contracture and amount of disuse. Atonic muscles under continued stress become progressively weaker and their function of support must then be taken over by fibrous and ligamentous structures. Ligaments under strain give rise to pain. Their function is maintainence of apposition of bone and as a check to undue motion. Only viscera have suspensory ligaments; these suspensory ligaments, while in the process of stretching, give rise to pain. When stretching is completed pain disappears.

With these fundamentals in review, the discussion is directed to the diagrams at hand.

Plates II and III (from Quains Anatomy) are presented for the visualization of the glibly-spoken but poorly studied ligaments joining the low back to the pelvis. An increased lumbo sacral curve from whatever cause, will produce a stretching force upon the anterior longitudinal spinal ligament as well as upon the ilio-lumbar and lumbo sacral ligaments. The anterior sacro-iliac ligaments are secondarily involved. In static strain due to "Hollow back", the ilio-lumbar ligaments are early involved and local tenderness is found superior to the sacro-iliac joints. In the older cases, sacro-iliac tenderness is demonstrable.

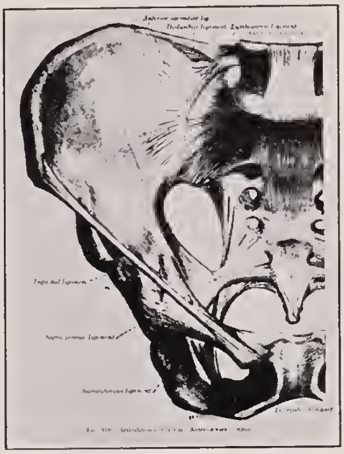

Plate II

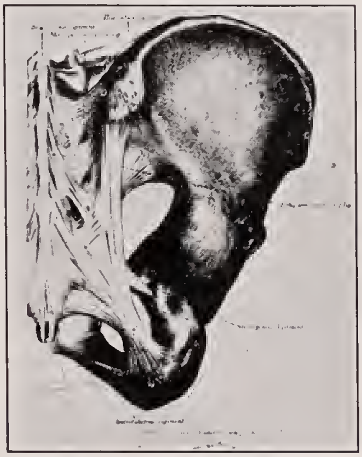

Plate III

(Plates IV, V, VI are taken from a collection of papers by Professor Fritz Lang of Munich). Plate IV in diagram demonstrates the comparative adverse mechanics in figure B. One recognizes readily the increase strain on muscle and ligaments supporting the lumbo-sacral angle. Plate V presents a comparative study in the body mechanics of children. These are familiar types of the "flat chest and angel wings", the "pot belly and sway back"; the "hanging head, round shoulders, and flat chest".

Plate VI presents a similar comparative study in adults with two types of flat chest and hollow back. The first is a typically atonic or fatigue figure. The thoracic capacity is diminished, inadequate pulmonary aeration leaves constantly a blood supply deficient in oxygen. The atonic abdominal will promotes intestinal stasis and increased drag upon the supporting mesentery. This type in both children and adults is most frequently addicted to constipation. Their poor musculature and mesenteric drag produce symptoms of weariness and indefinitely localized lesions. Their asthenia decreases with improvement of muscle tone and correction of constipation by proper habit formation.

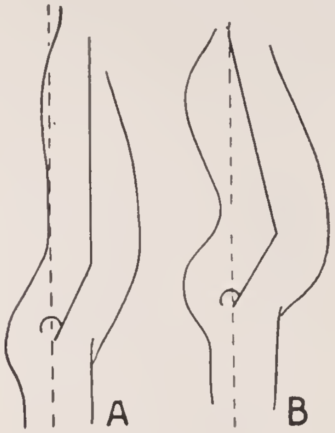

Plate IV

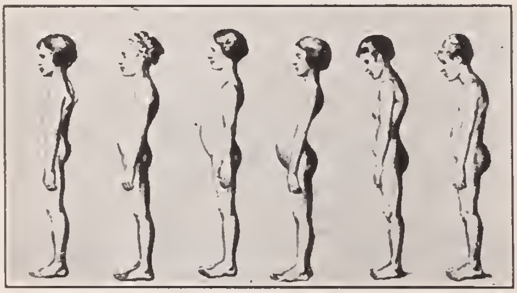

Plate V

In Plate V and Plate VI it is simple to visualize with the exaggerated lordosis, the over stretched anterior spinal ligaments, the contracted ilio-psoas and posteriorly the intrinsic spinal muscles as well as the erector spinae acting as a bow string on the lumbo sacral region. These backs develop pain due to muscle fatigue and ligament stretch. This pain is dull, aching, poorly localized, not radiating and relieved by rest. It is made worse by prolonged standing .

Faulty foot mechanics easily gives rise to a low backache due to the tilted pelvis with its increased lumbo sacral angle. Women, more than men, are so affected. Masculine foot wear is superior in stability and more generous in its relation to the supported foot.

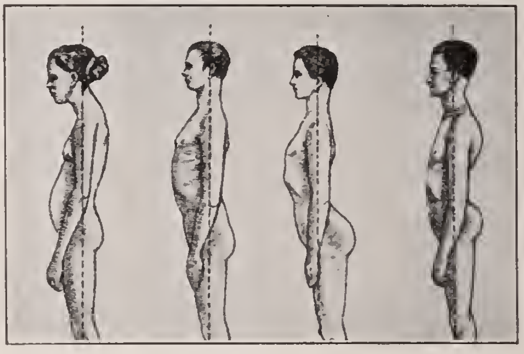

Plate VI

The relief of a "Static Backache" can come only with improvement or correction of those mechanical factors giving rise to fatiguing strain on muscles and ligaments concerned with the maintainence of a properly erect position.

MIDDLE EAR INFECTIONS DURING THE PAST WINTER

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The writer has many times recently remarked that he would welcome the end of the "mastoid season" this year. This is perhaps an unusual and unnatural statement for an otologist to make, but it has been an unusual type of case which has confronted me this winter and spring. I presume my experience has been quite typical of that of other otologists in Nebraska this year, but it is quite varied from the usual run of ear cases in the past.

The customary acute middle ear suppuration of previous years has been ushered in and run its course either to resolution and healing or to mastoid operation with very little or no swelling of the pre,-sub,-or post-auricular lymph glands.

I received warning of what was to come this year when early in September I saw in consultation with one of my associates, a case of cervical adenitis in a four-year old boy, following a severe throat infection. This case, in spite of every medical recourse at hand, eventually went on to suppuration and operation for drainage.

Following this with greater and greater frequency, I saw cases of adenitis, cervical, submaxillary or around the auricle, following tonsillitis, pharyngitis, tooth infection, middle ear suppuration and in many cases from no discoverable etiology. The swellings have ranged in size from the usual small "kernel'' to as large as a hen's egg.

A very large majority of all these, no matter what the etiology, underwent resolution after a more or less stormy course, but a certain percentage have required drainage.

Though I do not have at hand definite statistics, I should estimate that approximately eighty-five per cent of the two-hundred odd cases of suppurative otitis media treated by the author in the past winter, have developed at some stage in their course pre,- sub,- or post-auricular lymphadentitis. This complication has usually developed rather abruptly and not infrequently in a case which was apparently progressing in an entirely satisfactory manner. With the onset of the adentitis, a rise in temperature of from one-half degree to four degrees was usually noted and the patient, previously comfortable, became restless and irritable.

The duration of the enlargement has varied greatly, occasionally subsiding in forty-eight hours, more frequently lasting a week to ten days, and in some persisting four- to five weeks, or until drainage was instituted after suppuration developed.

In every case cultures from the pus so liberated has disclosed a pure streptococcic infection and in all cases where the discharge from the middle ear was cultured, streptococci were present and usually in pure culture.

Just why we have had this tremenduous increase in lymphadenitis, complicating otitis medias the past winter, I do not know. Whether a strain of streptococci, long present in this part of the country, has suddenly developed an affinity for lymph glands, or whether a new strain has been carried among us, is a question. To me it seems probable that the latter is the case and considerable weight is lent to this supposition by a conversation I recently had with an otologist, whose home is in New York State.

I remarked to him upon the prevalence of lymphadenitis with our present ear epidemic, and he informed me that a year ago they had exactly the same condition in the East, but that this year there had been very little of it. Apparently it is sweeping slowly across the country from East to West, travelling by "carriers' as did the "Flu" in 1918, and again this year. I shall be interested in noting whether we have a return to the normal next winter and whether the Western Seaboard has its epidemic next year as we have had this.

At all events, I hope we see less of it in Central Nebraska in the future, as it is a most discouraging thing to treat, both for the physician and the patient. In truth, there is very little to be done for the condition as I have been about as uniformly unsuccessful with the antistreptococcic serum injections, cold compresses or the icebag locally, or the application of iodex or other ointments. Nature seemingly is very reticent about helping us out, and leaves the matter very largely to the patient's resistance to eradicate. Probably of all the methods used, I have gotten a little the best results with the ice bag, kept on as constantly as possible. Needless to say, the middle ear condition, per se, must have the proper attention.

It might not be amiss to cite here the cases of four children in one family, whom the author had under his care during the past spring. These were Margaret-aged 10, Jean-aged 6, Junior-aged 4 years, and Jimmie-aged 18 months. They had all been healthy, normal children, and had never had any type of ear trouble previously. The two older children had had good T. & A. operations.

I was called to see Jean on January 16th, when following a mild "common cold" she developed a right earache. The drum was red and bulging and a free paracentesis was done. The left ear was normal in appearance. I cautioned the mother to keep the other children away from Jean. The infection subsided rapidly and in five days the discharge had ceased and the drum healed.

On January 24th, I was again called, this time to see Jimmie, the baby. I found a bulging left ear and opened it. The right ear at this time was negative. On January 26th, I opened Margaret's left ear, her right ear being normal. Two days later I opened Jimmie's second ear, the right one. At this time, Margaret was showing definite signs of left mastoid involvement, with swelling and redness and marked tenderness over the mastoïd process. I again opened the left eardrum very freely and had an ice bag applied constantly to the mastoid. The right drum was bulging at this time, and was opened also.

On February 2nd, a paracentesis of both of Jimmie's ears was again performed, as they were bulging though discharging profusely. Margaret's left ear and mastoid seemingly were subsiding and it was thought best to wait a while before deciding on a mastoid operation.

The next ear to be opened was Jean's left ear, which began to hurt her on February 5th. Ten days later, February 15th, I again opened this ear, and this concluded the list of paracentesis operations—a total of twelve, including both ears of all four children at least once, and four of them twice, within a period of about five weeks, ten of them being performed within two weeks.

After each parecentesis, there was very profuse serous discharge. During the heighth of the sickness, all four of the children were running temperatures, ranging from 99.4 to 104.8, and these continued for twelve days before any of the children had a normal temperature. It was during this period that the lymphadenitis appeared, each of the children showing it to a marked degree about both ears.

Ice bags were kept on the swellings as much as possible with no apparent results. On February 10th, anti-streptococcic serum was given in graded dosage to all the children. This produced no effect other than a severe, generalized urticaria, which Margaret developed five days later, and which lasted two and a half days, making her quite miserable.

Margaret, the oldest girl, was throughout the sickest, aside from the urticaria, twice developing marked evidence of mastoiditis on the left side and once on the right, and having for several days mild symptoms of arthritis in one joint after another. She was given salicylates in the form of salicionyl to tolerance. All four were given iodides in iodized casein tablets.

For two weeks, that household was in far from a happy frame of mind. From day to day there was no evident improvement. Three times I was ready to open Margaret's mastoids and three times held off. In spite of everything I could do, my four small patients were pouring out aural discharges, running temperatures up to nearly 105 degrees, and keeping their circumauricular lymphadenitis. Gladly would I have turned over the family to another otologist, but the parents were wonderfully patient and waited for results.

Finally a few rays of sunshine appeared from under the clouds. The aural discharge began to thicken and decrease in amount, and the lymphadenitis to disappear. And then after many more days, there was one dry ear and healed tympanic membrane. And then another and another. Margaret of course, was the slowest, but eventually on April 26th, her right ear was dry and well, and I have written "finis" to the worst, most protracted "one-family" car epidemic, in which no cases went to mastoidectomy, that it has been my privilege to follow.

The case of this family is cited simply because it is typical of the type of ear infections that have been so prevalent in my practice this winter and spring. Usually a "mild cold" followed by earache and middle ear suppuration, very profuse in quantity, of streptococcic origin, attended by marked lymphadenitis, in front and below the ear in nearly all cases, running a high fever and a very prolonged course in spite of all treatment and finally undergoing resolution and healing in most cases without mastoid operation.

My percentage of mastoidectomies, while somewhat higher than in past years, still is not high when the severity of this year's middle ear infections are considered, and I simply beg to recall to mind the old conservative statement, "most mastoid infections, given a chance, will get well without operation." As I stated earlier in this paper, I presume my experience has coincided with that of most of the otologists in our state this past year. Still it was sufficiently different from the experience of previous years, that I thought it might be of interest to my colleagues of the general medical profession not closely connected with the treatment of these cases, and it is with this hope in mind, that I have written this paper.

ABDOMINAL DRAINAGE*

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There is probably no subject in all abdominal surgery more important than that of knowing when and how to drain. There are many conditions in abdominal surgery that cannot be combated without drainage. I am of the opinion that it is the least understood of all steps in urgent abdominal conditions.

Drainage permits us to come to the rescue of the too often neglected patient: it has given him a chance for his life. Drainage was the greatest friend of the early abdominal surgeons, it tided them over the era when sepsis was not yet their known blessing. Each pathological structure removed is drainage, each adhesion broken is drainage, each partial or complete bowel obstruction released is drainage. The elevation of structures by mechanical means which improve their circulation is drainage.

In discussing drainage we cannot simply think of visceral and parietal membrane which is peritonitic in local and diffuse involvement. It is not always the peritonitis that must be met by surgery and drainage but it is the complications of peritonitis.

I have often wondered if vaginal puncture is all that it has been cracked up to be. It is only temporary relief and it often injures important pelvic structures and you can rarely enter a tubual or ovarian abscess by this route. I believe that a patient who can be relieved by a vaginal puncture is not too sick to be operated by radical suprapubic surgery and I believe it predisposes to chronic invalidism more than anything else.

In acute infected abdomens the Fowler position is to be condemned. The belief that by elevating the shoulders of a patient with a suppurative process in the belly, lessens the chances of absorption by the diaphragamatic peritoneum and also lessens the chance of subdiaphragamatic abscess is all folly. The only thing you do in a position of this kind is to drain downward to the dependent portion of your abdomen and then try and drain up again. You create a cess pool in the cul-de-sac then let the gut fall down in this pool and finally glue together and then wonder why you have an ileus. If you do not have pus in the cul-de-sac your bowels are going to gravitate down into the pelvis anyway hence producing traction on the messentary, lessening of the visceral blood supply and finally a paralysis of a portion of the bowel followed either by a paralytic ileus or an obstruction of the ilium due to a gluing together of the peritoneal surface of the bowel with exudate.

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*Read before the Elkhorn Valley Medical Society, Norfolk, July 31, 1929.

Why not keep your patient in the recumbent position turned on the right side or clear over on the belly. In a case of suppurative appendicitis let the pus seek the outside by the most direct route instead of letting it gravitate down into the pelvis and try and suck it out with a piece of garden hose or by some other means, this is the old method of draining up hill; let this diffuse in your mind and see how foolish the Fowler position really is. To place a drain into an uninvolved dependent point of the abdominal cavity anticipating future pus collection at such point is to encourage operative infection and predispose to postoperative bowel obstruction. For instance to place a drain in the pelvis when the appendix is in the rectro-cecal space is wrong. It is wrong to drain the pelvis if you cannot demonstrate that it contains pathological fluid.

In cases of tubal and ovarian infection especially if there has been a major degree of violence in order to break the adhesions and make a thorough enucleation of the pathology there will be a good deal of bleeding in the form of postoperative ooze and if this occurs in the infected area it predisposes to a postoperative infected clot and this may give rise to a great amount of trouble, therefore, some means of drainage must be provided.

Another portion of the abdomen which calls for drainage is the upper region, especially of the gallbladder and ducts. When to drain and when to remove a gallbladder we will not discuss but we all know that we have to do one or the other very often and after the removal of a gallbladder drainage is instituted by most of us, not only because the cystic duct ligature may slip but because there are very often accessory ducts between the liver and wall of the gallbladder and often the removal of the organ itself you may get a leakage of bile through these ducts hence some sort of drainage is called for.

As to the kind of material we use for drainage, there is quite a variety and quite a difference of opinion. We have rubber tubing of different size and stiffness, rubber dam, gutta percha, cigarette drains, glass tubes, gauze, plain and medicated. I am not in favor of using rubber or glass tubing of any size whatsoever due to the fact that it is a foreign body in the abdomen and is an excellent obstacle for a loop of bowel to kink around and become strangulated and it is too great a risk to take any chances. For the past few years I have been using rubber dam and gauze for draining the abdomen and find them far superior to the old rubber tubing. You can use either one alone or combine them in the form of a cigarette drain.

A drain should not be placed between or down into a coil of bowels but should be placed between the viscera and parietal peritoneum. Very often a rubber dam placed anterior to the terminal ilium will prevent a dangerous adhesion at the juncture of the ilium and cecum, especially in case of a gangerous appendix. This point is where we are most liable to get a gluing together of peroteneal membrane.

If you have to drain the pelvis insert a fenestrated cigarette drain and let the gauze do the sucking up of the contents by capillary attraction. Gauze does drain, contrary to the belief of some surgeons, that it does not. You can demonstrate this by taking two cases, one drain with gauze, the other with rubber tubing. You will have just as much, if not more drainage with the gauze, not only for 24 hours but for several days, due to the fact that with gauze you get a proliferating or expelling rather than an absorbing area from the tissue that it comes in contact with, thereby lessening periotenial absorption.

In tubal and ovarian infection where the pathology is extensive, oozing probably profuse and a cavity left after removal of the diseased parts, there is nothing that will give better results than to take several yards of iodoform gauze and coffer-dam the cavity not only to stop your oozing and blood clot formation but it acts as a shelf for the bowels to rest upon, lessening the chances to a marked degree of the bowel collapsing into the dependent and infected area later to become post-operative bowel obstruction.

As to the method of draining cholecystectomies probably the gutta percha or small rubber dam is as efficacious as anything we can use. The method of draining a gallbladder with a one-half inch stiff rubber tube, I believe, should not be practiced and I believe it will soon become obsolete. I have practiced for the past two or three years using only iodoform gauze one inch wide which is packed into the cavity of the gallbladder until its wall is well ballooned up to fairly good size this will obviate the infection from the gallbladder wall which so many surgeons talk about, it also furnishes better drainage for the gall ducts. If a rubber tube is inserted into the gallbladder and stitched into the wall of the fundus and the neck allowed to collapse which is surely to take place after a large gallbladder has been emptied of stones or bile, you can draw your own conclusion what is going to take place. You are going to obstruct the drainage of the cystic duct and where the wall of the gallbladder collapses you are to get pus pockets, hence future trouble. I have also found in using gauze that the gallbladder does not drain so long and you do not have that persistent fistula.

Some may not agree with me on gauze drainage but I have tried both and have come to the conclusion that gauze is the most satisfactory drainage material I have as yet used.

DERMATOLOGIC CLINICS

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Case 1. The patient is a man of forty, of a well developed physique, weighs 180 lbs. and appears to be in good health. He complains that for many years he has suffered from a more or less constant itching which does not depend on the season, temperature or any known external cause. He never had any illness, until several years ago, when he contracted syphilis, for which he was treated at that time.

Examination of the skin shows no evidence of any past or present eruption with the exception of scratch marks on his back between the shoulder blades. Nits are observed, glued to the hair in the axillae, a sufficient proof of pediculosis. This however does not account for the pruritus of such long standing. We occasionally see people in unsanitary surroundings, with no sense of personal cleanliness and often of low intellect, who are infested with lice for years. Their skin, however, is profoundly changed, covered with excoriations, crusts and old pigmentations and would never look as healthy as in this patient. The history of syphilis suggests a possible cause. In late syphilis of the nervous system, paresthesias are encountered such as numbness, tingling and itching. An examination of the spinal fluid will decide this question, but if negative and in the absence of skin-manifestations, the persistant itching would be very unusual.

With pediculosis and syphilis very improbable as causative factors, we must look elsewhere for an explanation. Pruritus without appreciable cause and not due to skin lesions is frequently called without any justification "idiopathic". Pruritus is actually a pain from irritated cutaneous nerves. Old people may suffer from it on account of dry atrophic skin, some people are sensitive to cold, others are affected with itching after taking a bath. A difficult problem confronts us if an internal condition is responsible. Intestinal and hepatic disorders, kidney diseases, diabetes, uric acid excess, pregnancy and a neurotic state are only a few causative agencies. We now have a patient at the University hospital who has recently been operated on for hypertrophy of the prostate gland. His pruritus was undoubtedly due to absorption from his infected bladder. Another patient comes to my mind, a woman of 45 years, suffering from severe general pruritus without a discoverable cause, until some time later she showed definitive symptoms of brain tumor. When this had been successfully removed the itching subsided.

What shall we do for this patient? We will have his blood and spinal fluid tested to make sure of, or to exclude syphilis. We will free him from the pediculi, which is easily accomplished. Next we will give him a complete physicial examination. We will investigate his habits, his diet, his use of stimulants and tobacco. We must remember that certain drugs are provocative, especially the opiates. Addicts to morphine and cocain have frequently sensations of crawling and itching. Meanwhile prolonged alkaline baths, lotions containing anti-pruritics such as phenol, menthol, camphor, chloral hydrate will give him temporary relief. None of these drugs have effect for a long time and should be changed, whenever necessary. Internally we shall try nerve sedatives, such as the bromides, barbital, cannabis indica, etc. Opiates should not be used because their quieting action is followed by a more severe itching and because of the danger of creating a habit.

Case 2. This man, sixty years old, states that three months ago he fell, striking his right knee. A lump appeared which broke down shortly, forming an ulcer with no tendency of healing and gradually increasing in size. The patient has always been in good health, is married and has raised a family, the members of which are living and well. The ulcer is located below the right patella in the middle line, is about two inches in diameter, round and sharply defined. The edges are not infiltrated, the walls descend perpendicularly, giving the ulcer a "punched out" appearance. The floor is covered with a "gummy" purulent discharge which quickly dries into thick dark crusts. The lesion is a typical broken down gumma and this diagnosis is further verified by the report of a 3 plus positive Wassermann.

This lesion is not rare and of no particular interest, except for the fact that it has not been recognized before. With the clinical signs being so characteristic, the failure is probably due to a reason which is very common. The subconscious idea still prevails, that syphilis is an immoral disease, to be looked for in persons of loose habits, notwithstanding the fact that a great number of people contract it by accident, without their fault, and in many instances entirely oblivious to it. Syphilis is no respecter of character, position or wealth. Being far spread, its possible presence must always be kept in mind. Overlooking it is as bad a mistake as taking it for granted without conclusive proof. A gummatous ulcer is not always diagnosed as easily as in this case. Sporotrichosis may produce similar ulcerations, but they are multiple, arranged in a chain formation and follow lymphatics. The fungus is easily demonstrated. Epithelioma may be thought of in old people, especially if following a trauma. It grows much slower, its edges are nodular, often of a pearly appearance and the floor is shallow and covered with easily bleeding granulations. The exclusion of tuberculosis, blastomycosis and vegetating granuloma should not be difficult.

A few words might be appropriate as to the treatment of this patient. His infection is old and must have encountered a considerable defense mechanism, to take such a mild course as not to be recognized sooner. The therapy of late syphilis has a different object than that of the early stage. We cannot hope to reach all the organisms, which by this time are in the deep tissues, in a short time, if at all. The percentage of cures decreases with the age of the infection. In a patient, sixty years of age, and with the functions of his organs not at their best any longer, we must be careful not to put a severe strain on them. Intensive treatment would be of no benefit and may do considerable harm. Our aim will be to subdue the activities of the spirochetes, to keep the patient free from manifestations, cutaneous and otherwise, and to keep a possible contagiousness at a minimum. This can be accomplished with intermittent administration of potassium iodide, mercury, preferably by inunctions, or bismuth, guided by periodical blood and occasional spinal fluid tests.

STATUS OF THERAPEUTICS OF IRRADIATED ERGOSTEROL

Alfred F. Hess, J. M. Lewis and Helen Rivkin, New York (*Journal A. M. A.*, Aug. 31, 1929), asserts that further clinical experience with preparations of irradiated ergosterol has shown that it is a specific for rickets, tetany and osteomalacia. As yet it has not been proved to be of definite value in other clinical conditions. In the course of the past year, a standard dosage has been established for the prevention and for the cure of rickets. Premature and exceptionally rapid-growing infants must be regarded as a separate group and dosage gaged according to a different scale. The basis of this standardization is a biologic estimation of antirachitic potency rather than a gravimetric assay of the irradiated ergosterol. It has been found that, if the prescribed dosage is observed, neither toxic symptoms nor hypercalcemia need be feared. These phenomena seem to be entirely or almost entirely due to an excess of antirachitic action. Hypercalcemia can also be induced experimentally by giving undue amounts of cod liver oil. Irradiated milk, especially dried milk, is likewise a valuable product in combating rickets and tetany, more especially in their prevention. Irradiated cereals will probably play no role in the control of rickets. In view of the numerous technical difficulties involved in the course of activation, such biologic products as irradiated ergosterol and irradiated foods should be subjected to careful laboratory control.

UNDULANT FEVER

A specific treatment of undulant fever is not yet available. The use of serums has proved disappointing. Vaccines have given more encouraging results according to recent reports from the continent. In particular, an antigen prepared from dried *Brucella abortus* has seemed efficacious in a small number of cases. In this country the use of acriflavine hydrochloride has been suggested to shorten the duration of the disease. (*Jour. A. M. A.*, November 9, 1929, p. 1475).

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THE NEBRASKA PROFESSION LOSES TWO OF ITS GREATEST MEN

The organized profession mourns the deaths within eight days of each other, of two former presidents of the State Association and two of its most eminent members. Both had been members of the Nebraska profession over forty years; both had been members of the Nebraska State Medical Association for two score years; both had attained well earned renown in special lines; both were thoroughly democratic—had evinced a real human interest in all mankind and were idolized by the profession; both had done a great deal of welfare work and had given liberally in time and means to medical charities; both had been world travellers; both had attained the allotted three score years, but were still active in the profession when stricken.

In the passing of Dr. Harry M. McClanahan, November 20, and Dr. Harold Gifford, November 28, 1929, the profession has suffered a distinct loss and their places will not be readily filled.

THE JOURNAL, THE PROFESSION AND THE FUTURE

With the beginning of another year let us in all sincerity wish you prosperity and happiness; then let us turn to the future of the Association and of the *Journal.*

The membership at the end of the year just passed was 1,199. We had several more members at one time a few years ago. It seems certain however that the increase of dues effective the last few years has not appreciably affected our membership, the members apparently believing that the organization and the service it offers is worth the price we now pay for the privilege of membership in an organization that concerns our life-work.

It would be a splendid thing for every member knowing of a neighboring physician who is an eligible non-member, to present the matter to him and in the vernacular of the modern promoter, "sell him" the Nebraska State Medical Association. Tell him what the association is, what it stands for and what it offers. Tell him that an eligible non-member is like a sheep wandering without a shepherd; like a mountain climber without a guide; like a hermit living in the woods. A little effort by each member should appreciably augment the membership for 1930.

Those responsible for the *Journal* are always keen to get some new features for the readers. We are particularly happy to announce that we have the promise of some very nice things for *The Nebraska State Medical Journal* during the ensuing year. Dr. Alfred Schalek will furnish a series of short snappy Dermatological clinics; Dr. Miles J. Breuer will furnish a series of Bulletins from the Laboratory of the Bryan Memorial Hospital; Dr. George Neuhaus will furnish some reports on Neurological subjects illustrated by case studies and the University of Nebraska College of Medicine will furnish some Case Studies in Goiter. Dr. Clarence Emerson has some more articles on the surgery of the Chest.

This with the varied mass of material on hand will furnish interest for the reader for many months. With the January *Journal* we are expanding by the addition of eight pages, making forty-eight pages of reading matter for the earlier months of the year and until the material in hand is given to the reader.

THE SECRETARIES' AND EDITORS' CONFERENCE FOR 1929

To be privileged to meet, year after year, the state representatives of organized medicine at the headquarters of the American Medical Association in Chicago is indeed a worthwhile treat. A meeting such as the conference of secretaries and editors is always an inspiration to the better things in medicine. The problems discussed at these meetings are always organizational and administrative.

The program this year was of particular interest to the Nebraska profession because Dr. E. R. Hays, Falls City, chairman of the committee on public activities had been asked to appear on the program to present the work being done by this committee. It is neither flattery nor state pride to state that Dr. Hays' paper was the one constructive paper of the entire program. He told of the various activities of the committee; the state fair exhibit and health examinations; the lay programs at the annual meeting places of the State Association; of the health programs given to the State Normal schools. The novelty and audacity of the program of the committee astonished the delegates present, and during the two days' meeting the work was much commented upon.

Dr. George H. Kress of Los Angeles discussed "A State Medical Association Constitution and By-Laws" featuring the newly revised California constitution with the enthusiasm of a true Californian. The Nebraska Constitution was revised several years ago as nearly as thought wise to correspond to the suggestions of the American Medical Association.

Dr. J. H. Musser presented the State Medical Journal's claims to a place in the sun. Your editor was interested to hear the speaker present almost the same argument presented by himself several years ago at a previous conference. That the state journal cements the profession of the state, that it helps preserve the *esprit du corps,* that it brings the local physician in the limelight of his state, and takes into consideration the fact that aside of being a physician he is a human being needing real human interest.

"The Present Status of Industrial Medicine" was ably presented by Dr. Carey P. McCord of Cincinnati who gave a keen analysis of industrial medicine. Industrial medicine requires a wide range of knowledge on labor problems, industrialism and economic problems, public health and curative medicine. A high standard of training is required to get the best results. Organized medicine must accept industrial medicine. It is a vast, living problem in industrial states and industrial centers. It has affected us up to this time very little in Nebraska, except possibly in Omaha and one has not heard much of the problem. It is a problem that must be settled and settled right in the near future.

Dr. Harry Hall of Wheeling, W. V., president of the West Virginia Medical Society and associate editor of the state Journal presented a philosophical dissertation of considerable length on medicine, medical organization and lay medicine. He scored the medical superman who ignores medical organization, regretted such institutions as the Ford hospital and the activities of the Rosenwald Foundation, plead for idealism in medicine, and prayed for leaders in medicine who should, like Roosevelt, be able to wield the big stick.

One of the most interesting and agreeable incidents of the meeting was the presentation to Dr. Olin West, Secretary of the American Medical Association of a white-gold watch and chain the offering of the secretaries and editors of the conference as a token of love to an able and most agreeable gentleman and secretary.

DIABETES AND DIABETIC COMA

An editorial in the *New England Journal of Medicine,* Nov. 20, 1929, discussing the present day treatment of diabetes and diabetic coma says on the shoulders of the family physician ultimately rests the hope of the prevention of diabetes and diabetic coma and proceeds:

"For every diabetic day spent in a hospital, we suspect there must be a hundred diabetic days lived in the home and the shepherds who watch these diabetic sheep as they wander and stray through life are the doctors who practice alone unaided by hospital facilities. Recently we have learned that during 1928 in Massachusetts coma mortality in hospitals and outside of hospitals was essentially identical. About 9 per cent died of coma. Possibly this figure is too low because unfortunately many certificates bear the term diabetes alone. So low a coma mortality is a splendid tribute to our state and is evidence of prophylactic coma treatment.

"Success in the treatment of the patient actually in coma comes when the patient receives continuous attention until well over his acidosis. In the words of our author "Camp on the case" but we would add *and work, too.* Many a patient will be rescued by following his clinical course with blood pressure readings, observations of the pulse and hourly analysis of the urine, even if his physician is not so fortunately placed as to be able to secure data upon the content of sugar and carbon dioxide in the blood."

All of which leads us to say that the family physician need not be helpless if confronted with a case of diabetes or diabetic coma because, perchance, hospital and laboratory facilities are not available. By the use of ordinary common sense, keen observation and a wise caution, the practitioner may proceed to treat the case of diabetes with or without coma by the ordinary clinical methods employed before hospitals and laboratories were available with a fair assurance of reasonably good results. Science is wonderful, but so also is clinical judgment. Personal observation fully substantiates the statement made.

OMAHA MEETING, SIOUX VALLEY EYE AND EAR ACADEMY

The meeting of the Sioux Valley Eye and Ear Academy held in Omaha on November 19, 1929, was, in point of attendance and value of material, one of the most successful that has been held in its history. The local men had a large and interesting dry clinic and the papers presented were well discussed. Dr. W. C. Finnoff, University of Colorado School of Medicine, showed a vast number of slides illustrating ophthalmoscopic fundus conditions and accompanying these microphotographs showing the underlying pathology. This collection is unsurpassed for its wealth of material and Dr. Finnoff's interpretations were in keeping with his reputation as a great ophthalmological pathologist.

Dr. A. M. Alden, Washington University School of Medicine, urged simple mastoid opertion on children whose ears continued to discharge in spite of correct hygiene and treatment. He stressed the point that the mastoid operation under these conditions tended to preserve the hearing and remove a dangerous focus of infection.

Dr. F. L. Lederer, Chicago, showed the necessity of full operative resources in attacking malignancies of the head and neck. Surgery, diathermy, x-ray, or radium should be used as each case indicated. He also spoke of the ease of making prothesis with the newer materials when an ear or nose had to be sacrificed in eradicating the malignancy. In these cases plastic surgery is unable to construct a good looking appendage and the artificial nose or ear hide the defect beautifully.

Dr. C. M. Swab, Omaha, gave an account of original work he had done on the effect of Botulism on the Ocular Functions.

In the evening a delightful social time was enjoyed at the banquet and the session was closed by a comprehensive talk by Dr. J. F. McDonald, Creighton University College of Medicine, on the Visual Pathways.

Dr. J. F. Naftzger, Sioux City, was elected president; Dr. F. H. Roost, Sioux City, secretary-treasurer.

The meeting will long be remembered from the fact that our dear friend, Dr. Harold Gifford, was in attendance and took an active part in presenting cases in his characteristically original and instructive manner. He seemed as vigorous and active as when I first knew him over thirty years ago. Every man present will treasure this meeting as the glorious sunset of a great man they knew and loved.

—H. B. Lemere.

CALL FOR PAPERS

If you wish to read a paper at the next annual meeting in May, 1930, send your name and title to the office of the secretary, R. B. Adams, Centre McKinley Bldg., Lincoln, Nebraska.

EDITORIAL PARAGRAPHS

Des Moines is to have a special school building for crippled children.

New advertisements in the number are from the Taylor Instrument Co., and Eli Lilly & Co.

The American College of Surgeons has already announced that the next annual meeting will be held at Philadelphia, October 13-17, 1930.

The annual dues are again payable and will become delinquent February first. Include prompt payment of dues in your New Year's resolutions.

In Detroit, among 116,997 children, between five and ten years of age, given the toxin-antitoxin treatment in 1928, 127 contracted diphtheria, a rate of 2.08 per 1,000.

Under the Sheppard-Towner Act, Nebraska has conducted classes in infant care among Indian girls. A public health nurse also is detailed for full-time work among the Indians.

The First International Mental Hygiene Congress will be held in Washington, D. C., May 5-10, 1930. Preliminary announcements obtainable at headquarter's office, 370 Seventh Ave., New York City.

A German, Doctor Forssmann, has passed a rubber tube from a median vein in the arm along the course of the larger veins to the heart, demonstrating the possibility of reaching the heart for direct medication.

The *Volta Review* is our authority for saying that all registrants at the University of Nebraska are given an audiometer test. All students shown to be sufficiently hard of hearing to need the training are then given the two-hour credit course in lip reading.

A new synthetic sweetening, somewhat sweeter than saccharine, has been developed from the waste products of corn, by Gilman and Dickey of the Iowa State College. Its name is "the *syn*-isonomer of 5-benzyl-2-furfuraldoxime". Sounds sweet to say the least.

Membership in tht Nebraska State Medical Association costs $8.00 per year. Figuring it down to smaller units the cost of membership is a little over two cents a day, about fifteen cents a week, sixty-six and two-thirds cents a month. We think you can afford that.

Consolidation or absorption in the pharmaceutical manufacturing lines are reported as follows: Sharp and Dohme have absorbed the Mulford interest; W. R. Warner and Co., the Waterbury interest of Des Moines, and The Abbott Co. has purchased the interests of the John T. Milliken Co.

A physician in western Nebraska has notified his clientele, through the local press, that after the first of November all medical service and medicines must be on a cash basis in order that they may receive the best he can give them in service. It will be interesting to hear how workable such a policy is.

The belief in witchcraft in early New England and other eastern states has its present-day counterpart in the "miracles" at Malden, Mass., cemetery, at Canistota, S. D., and Neligh, Nebr. The belief in the supernatural entrances the human mind. They want to believe; they like to be humbugged; they enjoy it. Let theirs be the pleasure.

The following Eastman Teaching Films are now available: Infections of the Hand, Intestinal Peristalsis, Blood Transfusion, Prostatic Hypertrophy, Inguinal Hernia, Simple Goiter, Rabies, Ectopic Heart, Breech Presentation, Acute Appendicitis (Lay), Acute Appendicitis (Prof.), Vestibular Tests, Amyotonia Congenita, Rabbit's Ovum, The Normal Heart.

Bower, in the *Pennsylvania Medical Journal* for November, 1929, reports delivery by laporotomy of a seven months living child, two years and nine months after a subtotal hysterectomy and right salpingo-oophorectomy. The mother made an uneventful recovery and the child lived two months. This is said to be the first case on record in which a living child and mother were saved by laporotomy.

A circular from the State Bureau of Health complains about the laxity of some physicians with reference to reporting quarantinable diseases. The suggestion is made that there are communities in which one physician will report his cases for quarantine while another physician will not. This is an age-old complaint. Respect for the law will require several prosecutions with good fat fines assessed to delinquents.

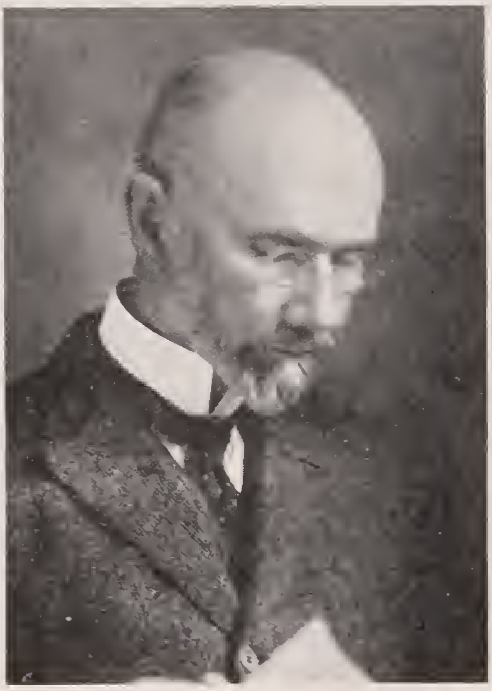
Maggots of blow-flies have been introduced by Dr. William S. Baer of Johns Hopkins University Medical School to fight wound infections. He got the idea from the wounds of neglected soldiers in the World war whose wounds were seething with maggots and who after receiving surgical care made more rapid progress toward recovery than the soldiers who received immediate surgical care. Maggoty wounds did not develop infections.

The death, November 21, of Dr. Victor C. Vaughn, at Richmond, Va., one of the really great men of American medicine, is announced. He was an ex-president of the American Medical Association, for many years dean of the Medical School of the University of Michigan, at Ann Arbor, for 22 years professor of hygiene and physiological chemistry at the same institution. He was a voluminous writer on medical and chemical subjects.

The forthcoming meeting of the Nebraska Section, American College of Surgeons, promises to be one of unusual and unique interest. A new thing is to be undertaken; Postgraduate Instructional Conferences have been arranged and it is thought will add much to the meeting. Physicians in this territory, whether members of the College of Surgeons or not are privileged and urged to attend the sessions. The two day meeting will be held at the Paxton hotel, Omaha, February 3 and 4, 1930. Note program in this *Journal.*

NECROLOGY

Harold Gifford, ophthalmologist, was born in Milwaukee, Wisconsin, in 1858; died suddenly on the morning of November 28, 1929, aged seventy-one years. He graduated with the degree of bachelor of science from Cornell University in 1879 and received his medical degree from the University of Michigan in 1882. A year as assistant in the Department of Pathology in the University of Michigan was followed by extensive post-graduate study in several of the European universities. He was appointed first assistant to Horner, then professor at Zurich, and one of the foremost clinical ophthalmologists of Europe. He returned to America and located in Omaha in 1886. He put his training in scientific principles, (which was unusual for that time), to good use in the problems of a busy practice, in which he was actively engaged until the time of his death.



DR. HAROLD GIFFORD

In pure laboratory research, his early work on the experimental production of sympathetic ophthalmia, with his demonstration of the fact that organisms may travel from the inoculated eye along the lymph paths into the orbit, and thence to the nerve and suprachoroidal spaces of the second eye, and his work on the drainage of the anterior chamber, will be remembered. In bacteriology, his contributions have perhaps been most important. He was the first to describe the fact that the normal conjunctival sac contains numbers of organisms, some of which may become pathogenic when they are carried into the eye by trauma or operations. In 1896 he gave the first description in English of the acute conjunctivitis caused by the pneumococcus, and first demonstrated that this organism was the cause, at least in the middle west, of this disease, by inoculations of secretion containing the organism on his own conjunctiva and that of an assistant, with production of the typical disease. Two years later he published the first description in English, of the Morax-Axenfeld bacillus at the cause of chronic conjunctivitis and of corneal ulcer. In 1910, he was the first writer in English, to describe involvement of the eyelids by the sporothrix, a member of the lower fungi which causes sporotrichosis, and the first in any language to describe a peculiar form of involvement of the ocular conjunctiva with this organism.

As a clinical observer, his name is attached to two eye symptoms which are of value in the diagnosis of exophthalmic goitre, and which he first described in 1906. In 1898 he reported the first American case of Parinaud's conjunctivitis, a rare condition which had previously been described by only a few observers in France and Austria. He was one of the earliest reporters of the Juvenile form of Family Amaurotic Idiocy, and his name has some times been associated with this disease.

In therapeutics, probably his most important contribution was the use of large doses of sodium salicylate in sympathetic ophthalmia, which has become the classical treatment of this disease in most countries.

In ophthalmic surgery, he made many important practical modifications of operations described by others, notably in the correction of ectropion by the use of Thiersch grafts, in the correction of cicatricial entropion by the use of mucous membrane from the lip, and in the method of carrying out the Machek operation for ptosis. The procedure of destroying the lachrymal sac with trichloracetic acid as a substitute for the troublesome excision of the sac in dacryocystitis, which has found wide acceptance, was original with him. He devised a form of trachoma forceps for expression of the folds, which presents decided practical advantages over previous instruments, and his brain knife for exploring the brain for brain abscesses, though less known, is a valuable instrument.

His writings have appeared chiefly in the form of articles for the various ophthalmological journals in this country, England and Germany. His most extensive works are the complete reviews of the subjects of sympathetic ophthalmia in the American Encyclopedia of Ophthalmology, and of Congenital Paresis of the Abducens, published in part in the American Journal of Ophthalmology. He was one of the editors of the Ophthalmic Record during its existence, and upon its fusion with other journals into the American Journal of Ophthalmology, became a collaborator in that journal.

As an educator, he was one of the founders of the Omaha Medical College, and served that institution as professor of ophthalmology and otology, and for a time as Dean of the faculty. He was one of the most interested in the absorption of that school into the Nebraska University College of Medicine in Omaha, and headed the Department of Ophthalmology and Otology in that college when the fusion was effected, and until his appointment as Emeritus Professor.

His purely scientific work was limited in later years by the requirements of a large practice. Into the care of his patients he put, not only exceptional knowledge, clinical judgment and operative skill, but also an intense personal interest. He never allowed personal inconvenience to interfere with anything which might add to a patient's chances. It was not unusual for him to personally see and treat a case of serpent ulcer three times a day. To those of us who worked with him, one of his most remarkable gifts was the ability to see at once when any case was not responding to treatment, when a different procedure would be commenced at once. His knowledge of ophthalmic literature was great, and he continued to read all the important journals of ophthalmology of the world until his death.

Besides his professional work, he found time for a surprising variety of other interests. An early interest in botany and zoology led him to travel extensively and to read all the books about travel and the flora and fauna of strange lands which he could obtain. It was also responsible for his active interest in preserving the natural life and beauty of the woods along the Missouri river. Politically, he was a socialist and devoted much time to advocating various movements to bring about liberal reforms.

In recognition of his scientific and clinical work, he was granted the honorary degree of M. A. by the University of Michigan and of LL. D. by the University of Nebraska, and was chosen as chairman of the ophthalmological section of the American Medical Association for its meeting in Cleveland.

The passing of Dr. Gifford will be mourned not only by his colleagues and associates, but also by the many to whom as a great physician he was able to bring comfort and hope.

He leaves a widow, two sons (Dr. Sanford R. and Harold, Jr.), and two married daughters.

IN MEMORIAM:

HAROLD GIFFORD, M. D., F. A. C. S., LL. D.
Professor Emeritus of Ophthalmology,
University of Nebraska College of Medicine.

Since our friend and associate Harold Gifford has been removed by the hand of death, we, the Faculty of the College of Medicine of the University of Nebraska, take this method of expressing our personal sorrow and sense of loss.

Dr. Gifford's eminent professional achievements, his public spirited interest in Omaha, his philanthropic work in adding to the beauty of the city and in developing the appreciation of the beauty by the citizens, his high standard of professional ethics, his ever-ready assistance to brother physicians, and above all his quiet and unobtrusive help to the poor and needy, have so endeared him to the people of Omaha and Nebraska and to us, his associates, that his death is a profound bereavement to the entire community. This loss is particularly great to us, in that it deprives us of a brilliant and inspiring teacher and administrator with an inspirational influence which reached far beyond the scope of his classes.

Therefore, we desire to formally express our grief, and to extend to Mrs. Gifford and her family our sincere condolences, all the more deeply felt because of the lovable personality and outstanding professional ability we no longer have with us.

Harry Monroe McClanahan, pediatrist; born, Norwood, Ill., August 17, 1856, son of Dr. John Porter and Margaret Jane (Jones) McClanahan; died, Omaha, November 20, 1929, aged seventy-three years.

He received his early education and was graduated at Monmouth (Ill.) College, receiving the A. B. degree in 1875. Attended Jefferson Medical College, Philadelphia, and received the degree of M. D. in 1878. Was resident physician of Jefferson Medical College hospital, 1878-79. Practiced at Alexis, Ill., 1879-80; agency physician at Ft. Belknap, Mont., 1880-81; practiced at Woodhull, Ill., 1881-89. He was married at Alexis, Ill., September 6, 1883, and of this union one daughter, Mrs. J. A. Henske, Omaha, remains. Came to Omaha in 1889. He was professor of pediatrics, Omaha Medical College (now University of Nebraska College of Medicine), from 1892. Was made professor emeritus, 1927, but continued to hold clinics and to lecture to the senior class up to the time of his death. He was a vice-president of the American Medical Association in 1912; member of the House of Delegates, 1903, 1916, 1917; sometime chairman of the section of Diseases of Children; member American Pediatric Society; member American Society for the Study and Prevention of Infant Mortality; member, American Teachers of Diseases of Children, (president, 1914-15); president, Nebraska State Medical Society (now Association), 1901; president Omaha-Douglas County Medical society, 1912; Fellow, American College of Physicians; member, Phi Ro Sigma and Alpha Omega Alpha.

Dr. McClanahan's life was a very active one from the time he graduated in medicine and he always endeavored to impart the knowledge of his observation and work to others.

He was a regular attendant at the meetings of the various national societies and endeavored throughout all his life to keep up with the present trend of medicine. While others took vacations for pleasure, Dr. McClanahan spent his time at the various clinics and medical societies and abroad to further his education along the lines of advanced medicine.

The first article published by Dr. McClanahan was in March 26, 1881, on The Practice of Medicine Among the Indians which was published in the Medical and Surgical Reporter, Vol. 44, Washington, D. C. He contributed several articles during the year of 1881 along this line. Some 50 articles dealing with pediatric problems were written and published in various national journals during his life. In his 70th year he wrote and completed his book on Pediatrics for the General Practitioner which was published Jan. 1, 1929, by J. B. Lippincott & Co. In all of the papers written and also the book published by Dr. McClanahan, the general practitioner was always kept in mind.

DR. HARRY MONROE McCLANAHAN

My own intimate association with him both in a professional way and in the home of the family dates back fifteen years and enables me to testify to those qualities which endeared him to all the members of the Association and also to the parents and children whom he had the privilege of having under his careful and tender observation and care.

On numerous occasions statements have been made by doctors by whom he was called in consultation, referring to him as one of the best and fairest consultants they had ever met. This, no doubt, has been universal with the physicians in this community, as I have never heard in all these years one criticism in this regard. He was an unusual man in many ways. He did not smoke although in younger years he had acquired the habit, but had the will power to give it up at the time of his marriage because the odor of tobacco was obnoxious to his wife and he continued to refrain from smoking throughout the rest of his life. He was an absolute teetotaller and could not see any benefit derived from alcoholic stimulants. He was very conscientious in the use of any opiate in his practice throughout these years. No doubt his experience in seeing drunkards and narcotic fiends had a great influence upon his prescribing or the use of any of these substances. He was a devout Christian, and practiced as well as preached the Gospel of Jesus Christ. He was a regular attendant of the Presbyterian church, also an elder and very seldom failed to attend at least the services once on Sunday and most always both services, morning and evening, and if away from the city he would always observe the Sabbath as a time to do homage to his Master. The home to Dr. McClanahan was sacred. His relationship to his immediate family and also to his grandchildren was that of a true Christian father and adviser.

The sentiments expressed by a great number of letters and telegrams were exemplified very clearly by very prominent pediatricians of this country who wrote:

"One of my best friends. Dr. McClanahan was a real gentleman, a kind physician who went out of his way to help the younger men". (Dr. Frank Neff).

"I have learned with profound sorrow of the passing of my dear friend, Harry McClanahan. He will be greatly missed by a community who loved him and by a profession who will hold his memory in high esteem". (Dr. Isaac Abt).

—J. A. Henske.

IN MEMORIAM:

HARRY MONROE McCLANAHAN, A. M., M. D.

Professor Emeritus of Pediatrics
University of Nebraska College of Medicine

Whereas, The Faculty of the College of Medicine of the University of Nebraska, having learned, with profound sorrow, of the passing of its distinguished member, Dr. Harry Monroe McClanahan on November Twentieth, Nineteen Hundred and Twenty-nine, and

Whereas, The Faculty, realizing that it has suffered an irreparable loss, desires to express its admiration for the kindly spirit, noble character, and scholarly attainments of its beloved and esteemed colleague,—Therefore, be it

Resolved, That the Faculty of the College of Medicine of the University of Nebraska offers this resolution as a tribute to the memory of Dr. McClanahan, the gifted comrade, inspiring teacher who gave of his best to the needy in body and soul. His services to mankind cannot be adequately measured. A master in his chosen field, he was an inspiration to others and responded to all of the finer things of life. Admired by his pupils and associates, he will be remembered for his devotion to the highest ideals of his chosen profession. It may be truly said of him that "he went about doing good".

Be It Further Resolved, That these resolutions be spread on the minutes of the Faculty of the College of Medicine of the University of Nebraska and printed in The Nebraska State Medical Journal, and that a copy of these resolutions be forwarded to the members of Dr. McClanahan's family.

Allen T. Rice, Beatrice, Nebr.; College of Physicians and Surgeons, Keokuk, 1881; retired; for more than forty years a resident of Beatrice; veteran of the Civil war; died November 17, 1929, after a lingering illness, aged ninety-four years.

T. E. K. Dihel, Chicago; Louisville Medical College, 1893; practitioner at Eagle, Nebr., for thirteen years and later at Oak, Nebr., seven years, until two years ago when he was forced to give up work on account of ill health and retired to Chicago; died of a paralytic stroke, November 23, 1929, aged about sixty-seven years.

Frank Simon, Oakland, Nebr.; College of Physicians and Surgeons, Baltimore, 1884; son of a physician; in practice at David City until 1882 when he located at Oakland; sometime medical director of the Commonwealth Life Insurance company and later of the Independent Life Insurance company of Missouri; died November 24, 1929, of organic heart disease, complicated by pneumonia, aged about sixty-seven years.

Harry L. Wells, Des Moines; Creighton University College of Medicine, 1902; practitioner at West Point, Nebr., from date of graduation until 1917 when he entered the medical corps of the army as a lieutenant and served during the World war; later a major in the public health service of the government specializing in tuberculosis and stationed at various veteran hospitals in the West until ill health forced his release from active duty; former member Nebraska State Medical Association; one time secretary, Elkhorn Valley Medical Society; died of tuberculosis at Des Moines, December 6, 1929, aged sixty years. Interment at West Point, Nebr. Three sons and a daughter and a widow by a second marriage survive.

John G. Smith, Wahoo, Nebr.; Ensworth Medical College, St. Joseph, Mo., 1891; physician at Wahoo for about thirty years; member, Nebraska State Medical Association; active in all civic affairs of the community; died December 5, 1929, aged seventy years.

CLINICAL PROGRAM COLLEGE OF SURGEONS

Ball Room, Hotel Paxton, Omaha, Nebraska, February 3-4, 1930.

Monday Morning Session
9:00 a. m. to 1:00 p. m.

1. Management of the Uterine Cervix, Ralph H. Luikart.
2. Radium Treatment of Cancer of Cervic. Lantern Demonstration. Palmer Findley.
3. Non-Operative Clinic. Discussion of two preceding papers by Burton J. Lee, New York, Member of Committee on Treatment of Malignant Disease.
4. Orthopedic Clinic:
    1. Fractures About Elbow.
    2. Fractures Os Calcis.
    3. Fracture Femoral Shaft. Reduction by Simple Angulation.
    4. Myositis Ossificans. Typical Case.
    5. Compression Fracture of the Spine. Reduction by Traction and Hyperextension.
    Lantern Slide Demonstration, James W. Martin.
5. Toxic Thyroidism, C. A. Roeder.
6. Fractures: Slides and Moving Pictures of End Results, John R. Nilsson.

Monday Afternoon Session
2:00 p. m. to 5:00 p. m.

Program presented by distinguished visiting Fellows of the College.

1. Dr. Bowman C. Crowell, Chicago, Associated Director, American College of Surgeons and Director of Clinical Research. Subject to be selected.
2. Dr. Paul B. Magnuson, Chicago, Assistant Professor, Northwestern University Medical School. Subject to be selected.

3. Dr. Burton J. Lee, New York, Member, Committee on the Treatment of Malignant Diseases, American College of Surgeons. Subject to be selected.

Monday Evening—6:30 p. m.

Dinner for members and guests, followed by business meeting of the Nebraska section.

Tuesday Morning Session
9:00 a. m. to 1:00 p. m.

1. Study of Fascial Spaces of the Feet. Slides. M. Grodinsky.
2. Sarcoma of the Shoulder.
   Early Treatment of Club Feet.
   Torticollis.
   Congenital Anomalies of Low Back.
   Cases Presenting Fracture Problems.
   —John Prentis Lord, Robert D. Schrock, Herman F. Johnson.
3. Laryngeal Cases Demonstrated by Flateau Laryngoscope, P. Romonek.
4. Ludwig's Angina, J. Frederick Langdon.
5. Cleft Palate and Cleft Lip Cases, William L. Shearer.
6. Congenital Hypertrophic Stenosis and Its Operative Treatment, Alfred Brown.

Tuesday Afternoon Session
2:00 p. m. to 3:00 p. m.

1. Dr. Seale Harris, Birmingham, Alabama, Emeritus Professor of University of Alabama.

3:00 p. m. to 6:00 p. m.

2. Instructional Conferences.

8:00 p. m. to 10:00 p. m.

3. Public Meeting, Technical High School, Auditorium.

This meeting will include addresses by six distinguished visiting Fellows and the presentation of one or more motion picture films.

Post Graduate Instructional Conferences
Tuesday, February 4, 1930—3 to 6 p. m.

The instructional conference is intended as a post graduate course and is open to all, both non-members and members of the American College of Surgeons.

Each conference occupies one and a half hours. The subjects in their fundamentals will be carefully developed in each case for a period of about 45 minutes. After the talk and demonstration, the remaining portion of the period will be taken up by discussion of the points in the talk or of allied problems.

Registration for the conferences will be at the time of the meeting at a special desk or may be made through the mail. It is advisable that the registration fee and conferences desired, be sent by mail as early as possible as the conference will be strictly limited to 15 students. The fee for each conference is $1.00 and must accompany registration. Write the committee for any member or subject you wish which is not included in this list and if there is a sufficient demand, additional instructors or subjects will be added.

These conferences are not hap hazard round table talks but are well prepared post graduate work on the different subjects. This post graduate work has proved a most valuable part of several of the large societies and we are sure that an appreciation of its significance and scope will mean a full registration on the conferences.

For further information or registration, communicate with—Dr. H. B. Lemere, 920 Medical Arts Building, Omaha, Nebraska.

Instructors and Subjects

3 to 4:30 p. m., McMartin, Dr. Charles: Renal Tumors, Gross Specimens, Pyelograms.

3 to 4:30 p. m., Brown, Dr. Alfred: Prognosis in Goitre.

3 to 4:30 p. m., Findley, Dr. Palmer: Uterine Hemorrhage.

3 to 4:30 p. m., Keegan, Dr. J. J.: Head Injuries.

3 to 4:30 p. m., Quigley, Dr. D. T.: Cancer of the Mouth.

3 to 4:30 p. m., Emmert, Dr. Max: Gall Bladder Diseases from the Medical and Surgical Viewpoint.

3 to 4:30 p. m., Waters, Dr. C. H.: Cancer of the Breast.

3 to 4:30 p. m., Davis, Dr. Edwin: Prostatic Hypertrophy.

4:30 to 6 p. m., Kennedy, Dr. C. R.: Acute Abdomen in Children.

4:30 to 6 p. m., Moon, Dr. Louis E.: Recognition Rectal and Colon. Pathology.

4:30 to 6 p. m., Summers, Dr. J. E.: Practical Anesthesia.

4:30 to 6 p. m., Roeder, Dr. C. A.: Goitre.

4:30 to 6 p. m., Sage, Dr. Earl C.: Technique of Injection of Lipiodol in the Uterus and Tubes, in the Diagnosis Cause of Sterility.

4:30 to 6 p. m., Weinberg, Dr. J. A.: Gastric Ulcer and Carcinoma.

4:30 to 6 p. m., Rich, Dr. Charles O.: Hernia.

4:30 to 6 p. m., Hull, Dr. Charles A.; Johnson. Dr. Herman F.: Treatment of Fractures.

4:30 to 6 p. m., Johnson, Dr. A. C.: Varicose Veins. The Injection Treatment.

In addition to this scientific program there will be a two day session of the Association of Standardized Hospitals of Nebraska, under the direction of Dr. H. H. Davis, of Omaha, assisted by Dr. Malcolm P. MacEachren, Chicago, Associated Director of the American College of Surgeons and Director of Hospital Activities, and Mr. Robert Jolly, Houston, Texas. This meeting will be of vital importance to everyone identified with the management of hospitals in Nebraska. The program has not been definitely decided upon but there will be speakers who will discuss the various hospital activities, and following each there will be an open forum.

—Dr. J. P. Lord, Chairman Program Committee.
—Dr. H. B. Lemere, Chairman Instructional Conferences.

THE SOCIETIES

The annual meeting of the **Omaha-Douglas County Medical Society** was held in the Medical Arts Auditorium. Dr. C. W. Pollard was elected president and Dr. Herman Jahr was reelected secretary-treasurer. Delegates named for the State Association are Drs. L. B. Bushman, Charles Moon, Glen Miller, and W. R. Moody. The annual banquet will occur at the Fontanelle hotel January 14.

The regular meeting of the **Lancaster County Medical Society** was held November 5, 1929. Dr. C. W. M. Poynter was entertained at dinner at the University Club by about thirty members of the society Afterward he spoke in the Sharp Building on "Experimental Studies of the Peritoneum." This work was begun to determine the efficacy of drainage of the thoracic duct in cases of general peritonitis. Dr. Poynter had from his general experiences regarded this as a procedure without a scientific basis. By injecting dyes, particulate matter and bacteria into the peritoneal cavity it was found that within a few minutes all these substances could be found on the under surface of the diaphragm, from which point they migrated along lymph channels on either side of the thoracic spine to the lower cervical lymph nodes. They could not be recovered from the thoracic duct. He also found that bacteria injected into the peritoneum could be recovered from the blood within eight minutes and that they continued in the blood stream for two or three days. He concluded that the lymphatic drainage from the peritoneum is by this channel.

Further studies in which similar materials were injected into the wall of the viscus itself with physiological pressure revealed that the substances did not migrate beyond the mesenteric lymph nodes. This he concluded was the sole lymphatic drainage system from the parenchyma of the abdominal viscera.

When fat stained with a dye was fed by mouth a lacteal system is distinctly outlined leading into the thoracic duct. This system is distinct from the lymphatic system which is filled from the wall of the viscus.

Further investigation of the action of the omenta revealed no lymph channels draining those structures, the portal circulation being their only means of drainage. The omenta were shown to engulf foreign substance in the peritoneal cavity within its substance, this foreign material later being broken down by phagocytes with the return of the omenta to their natural state. Lantern slides which illustrated these findings were shown.

Dr. Poynter very kindly answered and discussed questions by members of the society. One important fact which was brought out, was that he had no evidence of retrograde flow in the lymph channels from the neck of the peritoneal structures. Another point which was brought out was that after peritonitis is induced, the process continues as we see it clinically and that after about three days cultures prove the cavity to be sterile, although the animal may die. This, he said, made him inclined to agree with Dr. McKinnon that the dangerous feature of peritonitis is not the infection, per se, but the associated ileus.

A rising vote of thanks was accorded Dr. Poynter for one of the best evenings in the history of the society.

The regular meeting of the **Lancaster County Medical Society** was held Tuesday, November 19, 1929. Dr. Louis E. Moon of Omaha, Nebraska, guest of the evening, was entertained at dinner at the University Club by about fifteen of the members. Later he addressed the society in the Sharp Building on "Rectal Diseases".

The first part of the evening was devoted to a discussion of symptoms which should call for a rectal examination. Of these symptoms he discussed pain, bleeding, itching, constipation and frequent defacation. He also mentioned certain general constitutional symptoms. He emphasized the importance of a detailed history of these symptoms and their relation to pathology within the anal canal or rectum. He then made some comments on the injection treatment of internal hemorrhoids, saying that the procedure was justifiable and in many cases very satisfactory. He feels it should be used in patients who will not submit to surgery, rather than drive them to the charlatan.

The latter half of his discussion had to do with colitis and proctitis. He correlated the various types of colitis by the following theory: Originally all cases begin as a proctitis with acute local and general symptoms. After a number of these attacks the process gradually extends upward and involves all of the colon. This extension is aggravated by cathartics and irritating foods. Nature attempts to protect the mucous membrane by an increased mucous secretion and there is at this juncture a condition which we commonly call "mucous-colitis". The irritation is continued by bran and other roughage in the diet and by the use of acid fruits and stronger cathartics and the mucous membrane is thinned out and nature attempts to overcome the condition now by an increase in the muscle tone of the bowel, resulting in "spastic colitis". At about this point cathartics fail to overcome the constipation and the patient resorts to large enemas which result in a relaxation of the colon and "atony" of the bowel. The final stages of this atonic condition are "diverticulosis" and if a diverticulum becomes inflamed "diverticulitis". On this theory he considers the bowel condition primary and the nervous condition secondary.

In the discussion which followed questions were asked about the treatment of colitis and Dr. Moon stated that he had had no material success with any type of vaccine and that his treatment consisted chiefly in irrigation and bland diet without fruit juices. He considers the leafy vegetable the best type of food to produce a bulky. coherent non-irritating stool.

—Roy W. Whitham, Secretary.

The **Madison Five Counties Medical Society** met at Madison, November 29, with an attendance of thirty-three physicians and their wives. After a sumptuous dinner at the Horst Hotel, it developed that owing to weather conditions the Omaha talent, expected to put on the major part of the program, was unable to attend. Dr. George M. Hanson presented a case of tularemia contracted through a cut while skinning a skunk. Less than 24 hours after exposure patient developed violent chills and fever lasting most of the night and ending in severe sweating. Pain and swelling of hand and forearm supervened, a dusky blotched eruption followed. Drainage was instituted and the finger and hand treated with sealed wet dressings. Little pus was discharged, but considerable sloughing occurred. Patient is slowly convalescing. Dr. J. J. Bruce reported two cases of perforated gastric ulcer occurring within three days in two brothers in the Madison community, recently. Both died following operation. The proposition of having the county employ a county nurse came up, was quite fully discussed, and the sentiment seemed to be a tie on the proposition.

The following resolution was adopted:

Whereas during the week it has pleased the Giver of all Things to call from their labors, Dr. Harry M. McClanahan and Dr. Harold Gifford, two of Nebraska's great physicians, as well as two of her truly great men; and Whereas, Both these men have frequently given freely of their time and talents to this society and its individual members; Be it Resolved, That this society having as it does a feeling of great personal bereavement in the passing of these men, wishes to convey to their families and to those closely associated with them, its sincere and heart felt sympathy. While to them it is a personal bereavement, to the rest of the world it is a distinct loss.

So long as life itself shall last,
We'll honor both these men;
For well we know, their kind's not apt
To pass this way again.

The annual meeting of the **Madison County Medical Society** was held in the ballroom of the Hotel Norfolk, December 10. The dinner preceding the session was attended by about sixty physicians and wives. A round table discussion on fees occupied a part of the time of the meeting and a committee on a suggestive fee bill was appointed to report at the next meeting. Dr. A. J. Schwedehelm of Creighton was elected president and Dr. R. A. Frary, Stanton, was elected secretary-treasurer. A social hour followed. A program consisting of solos, violin selections and monologues was put on by talented members and was interspersed by dancing.

The **Richardson County Medical Society** held its regular monthly meeting at the Hotel Weaver, Falls City, December 5th, at which time the following program was given: Symposium on "Angina Pectoris", Drs. M. L. Wilson, H. R. Miner and C. L. Hustead; "Eczema in Children", Dr. E. R. Hays.

The **Colfax County Medical Society** met at the Kolouch Hospital at Schuyler, November 21, 1929. All members but one were present. Dr. F. G. Kolouch presented a case of Erythromelalgia; Dr. C. D. Eby discussed Diabetic Gangrene.

—W. J. Kavan, Secretary.

The fall meeting of the **Republican Valley and Tenth Councilor District Medical Society** was held at Holdrege, Nebr., October 31, 1929. Heavy rains lowered the attendance to about thirty. New officers for the next year were elected as follows: President, G. W. Clark, M. D., Bertrand; Vice President, W. I. Deevers, M. D., Upland; Secretary, M. B. Wilcox, M. D., Holdrege; Treasurer, L. F. Egen, M. D., Hastings. The program consisted of an address on "The Economic Status of the Rural Physician", Doctor G. W. Clark, Bertrand, Nebr.; "Local Treatment of Skin Diseases," by Charles McMartin, M. D., Omaha, Nebr.; "Through India with an Opthalmologist, Illustrated by Moving Pictures," E. C. Foote, M. D., Hastings, Nebr.; an address on "The Mal-Practice Problem," Henry Bush, Omaha, Nebr.

Much enthusiasm was shown at the meeting and proved again the inestimable benefit the councilor districts meetings confer on their members, meeting face to face with practically all the practitioners in your territory, talking and eating with them, can not help but increase our professional ties and help us to present a more solid front when it is necessary for the welfare of the profession and as a corollary, the welfare of the public.

—L. F. Egen, Secretary.

At the **Burt County Medical Society** meeting at Tekamah, December 3, Dr. L. E. Sauer, Tekamah, was elected president and Dr. H. W. Benson, Oakland, was reelected secretary-treasurer. Instead of a set program, shop was talked.

The **Adams County Medical Society** elected Dr. H. P. McPherson, Hastings, president and Dr. Lother F. Egan, secretary-treasurer.

At the annual meeting of the **Scottsbluff County Medical Society**, December 12, election of officers for the ensuing year was held and the following were voted to serve for the year 1930: A. L. Cooper, M. D., Scottsbluff, president; Ted E. Riddell, M. D., Scottsbluff, secretary-treasurer.

During the coming year symposiums will be given at each meeting, and the papers will be supplemented with motion pictures on the subject. The Scottsbluff county society has very pleasant quarters in the West Nebraska Methodist Hospital building, Scottsbluff. A medical library is maintained within the hospital, where all of the recent editions of the current literature are at disposal. There are thirty members in the society and during the past year the average attendance at each meeting was twenty-six.

It is our ambition to make this society the best in the State of Nebraska and we extend an invitation to any doctor in the state or elsewhere who is in good standing to visit us. During the past year we have had frequent visitors from the profession in Denver and other points in Colorado, but not one visitor from Nebraska.

—Ted E. Riddell, Secretary-Treasurer.

HUMAN INTEREST TALES

Dr. David E. Winegar of Lincoln has located at Nehawka.

Dr. and Mrs. B. B. Davis, Omaha, are on a trip to Honolulu.

Dr. Frank Salter, Pierce, has just recovered from a broken arm.

Dr. H. P. Benjamin formerly of Irwin, Iowa, has located at Belden.

Dr. H. S. Andrews, Minden, addressed the P. T. A., Nov. 29th, on good health habits.

Dr. and Mrs. C. W. Slagle, Alliance, are on a trip to the Mediterranean and Egypt.

Dr. Raymond M. Rice, Omaha, was reported last month suffering from Ludwig's angina.

Mrs. G. W. Dishong has been elected President of the Women's Auxiliary for Douglas County.

Dr. B. C. Tiesing, Columbus, has been seriously ill in an Omaha hospital during the past month.

Dr. Herbert Worthman, Louisville, and Miss Ann Schalander, Omaha, were married December 3d.

Dr. J. L. Barritt, for the past two years in practice at Nehawka, has moved to Oatman, Ariz.

Dr. A. S. Koebbe, Columbus, spoke on Medical Progress before the Norfolk Lions club last month.

The partners of the late Dr. Harold Gifford will continue the practice at 1620 Medical Arts Building, Omaha.

Dr. A. J. Callahan formerly of Potter has located at Ashton in succession to Dr. S. J. Walters who has left.

Dr. Azalia Smith, Omaha, has written a scenario entitled "Uncle Tom's Story" and found sale for it in Hollywood.

Dr. H. L. Leedom, a former resident of Kearney but not recently in practice, has located at Gibbon to engage in practice.

Fire damaged the office and equipment of Dr. R. E. Sawyer, Doniphan, to an amount approximating five hundred dollars recently.

Dr. E. C. McAleer, Tecumseh, has converted a newly acquired residence property into a hospital and offers the facilities to the profession.

Dr. Frank Nicholson, St. Paul, submitted to an operation at Grand Island, recently for complications arising from an auto accident last spring.

Dr. W. H. Scions, Omaha, has been appointed an assistant medical director for the Pacific Mutual Life Insurance Co., and has gone to Los Angeles.

Dr. Palmer Findley was elected President of the Central State Association of Obstetricians and Gynecologists, at the annual meeting held at St. Louis, early in December.

Dr. D. B. Stidworthy, Homer, has returned from a hunting trip to the Black Hills. The seven men constituting the party killed 2 deer, 2 elk, and a 1700 pound buffalo.

Dr. C. B. Eby of Leigh had the harrowing experience of being pinned under his overturned automobile for more than half an hour at night. He suffered only minor injuries.

Press clippings indicate that the people of the vicinity of Curtis are endeavoring to raise a fund for the erection of a monument to a pioneer physician named Wilson, evidently the late Dr. Willis Wilson who died some years ago.

Dr. Michael G. Wohl, formerly of Omaha, head of the Department of Research Medicine of Temple University Medical School and Chief of Metabolic Clinic of the Samaritan Hospital, is giving a postgraduate course of twelve lectures on Medicine under the auspices of the Gildersleeve Study Club of the Academy of Stomatology.

NOTICE OF EXAMINATION

For Entrance Into the Regular Corps of the United States Public Health Service.

Examination of candidates for commission as Assistant Surgeon in the Regular Corps of the U. S. Public Health Service will be held at the following-named places on the dates specified:

At Washington, D. C., January 27, 1930.
At Chicago, Ill., January 27, 1930.
At New Orleans, La., January 27, 1930.
At San Francisco, Cal., January 27, 1930.

Candidates must be twenty-three years and not over thirty-two years of age. They must have been graduated in medicine at a reputable medical college, and have had one year's hospital experience or two years' professional practice. They must satisfactorily pass oral, written, and clinical tests before a board of medical officers, and undergo a thorough physical examination.

Successful candidates will be recommended for appointment by the President, with the advice and consent of the Senate.

Request for information or permission to take this examination should be addressed to the Surgeon General, U. S. Public Health Service, Washington, D. C.

—H. S. Cumming, Surgeon General.

EXTENT OF ILLNESS AND OF PHYSICAL AND MENTAL DEFECTS IN THE UNITED STATES

The above is the title of "Abstract of Publication No. 2" of the Committee on the Cost of Medical Care. These studies indicate that people are, on the average, disabled at least once a year, the rate varying by sex and age; men about once a year, women from once to twice a year and children over twice per school year of 180 days. The very young and the very old suffer far more frequently than persons in late adolescence and early maturity.

A number of studies indicate that adult males lose seven or eight days per year on the average and adult females lose from eight to twelve days on account of illness. The data indicates that the 36,000,000 wage earners of the United States lose at least 250,000,000 work days and the 24,000,000 school children lose 170,000,000 days per school year.

The diseases that cause most of this loss of time as we may guess are colds and bronchial conditions, influenza and grippe, digestive disorders, diseases of tonsils, pharynx and larynx, non-venereal diseases of the genito-urinary system, "headache", rheumatism". Boils, scabies, pediculosis and other skin affections are as important both in number and in amount of disability caused as the others above named.

A recent study seems to show that 89% of people, by the time they have reached 20 years, have had measles, 77% whooping cough, 72% mumps, 52% chicken pox, 11% scarlet fever, 10% diphtheria.

Syphilis and gonorrhoea at any one time appear to be causing nearly one person in a hundred to place himself under the care of a physician; there are at all times approximately 700,000 persons afflicted with tuberculosis, 10,000 with pernicious anemia, and 110,000 addicted to narcotic drugs. The study, while limited by its incompleteness, is quite an interesting revelation.

TETANY FOLLOWING USE OF COCAINE AND EPINEPHRINE IN INTRANSAL OPERATIONS

The observation of Sam E. Roberts, Kansas City, Mo. (*Journal A. M. A.*, Sept. 21, 1929), corresponds to Osler's description with one exception; i. e., the fingers are usually separated. He recognized this condition only eight years ago and is sure it must have occurred many times before but the spasm, as such, went unobserved. He concludes that tetany is a frequently overlooked symptom complex following the use of cocaine and epinephrine in the nose. No direct references in the literature could be found. It is not a serious complication, but a very distressing one for the patient if untreated; it is not a drug intoxication; it is not due to a condition or a single drug but to a combination of hypoparathyroidism, hyperventilation and epinephrine in nervous, emotional patients. It is satisfactorily and quickly relieved by subcutaneous administration of parathyroid extract-Collip.

AN UNAPPRECIATED CAUSE OF CHRONIC TROUBLE

Following the bronchographic examination of a large number of patients suffering from so-called chronic bronchitis, evidence of bronchial dilatation was found by Alton Ochsner, New Orleans (*Journal A. M.*, July 20, 1929), in more than 90 per cent of the cases. He says that cases of chronic bronchitis lasting over a period of months or recurrent attacks of acute bronchitis should be given the advantage of a bronchography. The introduction of iodized oil into the tracheobronchial tree is of distinct therapeutic value not only in those cases of chronic bronchitis and recurrent attacks of acute bronchitis but also in the cases of definite bronchiectasis with large amounts of foul sputum. The method used for introducing the iodized oil into the tracheobronchial tree should be simple; it should not require a great deal of techinal skill; it should be easy to carry out, harmless and not unpleasant for the patient. This is best accomplished by the passive technic.

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A RESUME OF INTERPRETATIONS FROM 1517 OPERATIONS UPON THE THYROID GLAND*

C. A. ROEDER, M. D.,
Omaha, Nebr.

Since there were never two students of medicine, two patients or two diseases exactly similar, our knowledge of abnormalities is merely an interpretation depending entirely upon a perspective. Whenever an author presents his own views, based upon originality, he merely offers his own interpretation, which to be of value or interest to others, must have a foundation and framework for discussion and illustration. Individual interpretation is far more interesting than an attempt at universal standardization of abnormal biological phenomena, because we know so little about the normal. It also leads to healthier discussions and disputes which are always signs of progress. We must disagree in order to stimulate originality, resourcefulness and ingenuity. Too much standardization leads to stagnation. My views of the thyroid gland are based upon the following outline:

OUTLINE OF THE NORMAL AND ABNORMAL THYROID

I Origin of the thyroid and parathyroids.
II Development in biological scale.
III Normal structure.
    (a) Fetal.
    (b) Post-fetal—(1) Infancy (2) Childhood (3) Puberty (4) Early adult life (5) Menstruation (6) Pregnancy (7) Lactation (8) Menopause (9) Late adult life (10) Senility.
IV Function of normal structure.
    (a) Fetal.
    (b) Post-fetal.
    (c) Relation to other structures.
    (d) Relation to other physiological reactions.

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*Read before the meeting of the Nebraska State Medical Association at Omaha, Nebraska, May 14-16, 1929.

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- (e) Dysthyroidism.
- (f) Hypothyroidism—Intermittent or constant—inherited or acquired.
    - (1) Due to structure — function — outside stimulation.
- (g) Hyperthyroidism — Intermittent or constant—inherited or acquired .
    - (1) Due to structure — function — outside stimulation.

- V Abnormal structure.
    - (a) Extra-follicular.
        - (1) Malignant hypertrophy and hyperplasia.
        - (2) Non-malignant hypertrophy and hyperplasia.
        - (3) Infections.
    - (b) Intra-follicular.
        - (1) Malignant hypertrophy and hyperplasia.
            - (a) Colloid deposits.
            - (b) Hypertrophy — hyperplasia — degeneration — of fetal follicles and fetal follicular cells.
            - (c) Hypertrophy — hyperplasia — degeneration — of post-fetal follicles and their cells.
        - (3) Infections.
- VI Function of abnormal structure.
    - (a) Extra-follicular.
        - (1) Malignant hypertrophy and hyperplasia.
        - (2) Non-malignant hypertrophy and hyperplasia.
        - (3) Infections.
    - (b) Intra-follicular.
        - (1) Malignant hypertrophy and hyperplasia.
        - (2) Non-malignant hypertrophy and hyperplasia.
            - (a) Colloid deposits.
            - (b) Hypertrophy — hyperplasia — degeneration — of fetal follicles and fetal follicular cells.
            - (c) Hypertrophy — hyperplasia — degeneration — of post-fetal follicles and their cells.
        - (3) Infections.

The above diagram, of my own design, gives me a foundation from which I can classify abnormal conditions of the thyroid according to my interpretation. It is apparent that very little attention has been paid to extra-follicular changes and justly so. The so-called round cell infiltration and the increased lymphoid cell development outside of the follicles in exophthalmic goiters are of negative significance, clinically as well as microscopically. The picture of the follicles themselves tell the clinical story of non-malignant goiter. The clinical classification of goiter must, therefore, be based upon the changes found within the follicular portion of the gland together with the clinical syndrome presented by the patient. There are four distinct types of non-malignant thyroid follicles found in all types of goiters: viz., (1) fetal; (2) post-fetal or normal; (3) colloid, and (4) hypertrophic. In many goiters all types of follicles may be found and the predominating follicle often presents the predominating clinical picture. The microscopic picture of a non-toxic adenomatous goiter is often similar to a toxic adenomatous goiter. The microscopic picture of an exophthalmic goiter before the administration of iodine, is most distinctive and only similated by three other conditions, viz., the hyperactive and hyperplastic but non-toxic thyroid glands of puberty, of pregnancy and of general septicemia. In all these conditions, as in non-iodized exophthalmic goiter, we find a most distinctive microscopic picture, viz.: a columnar hypertrophy of the follicular cells, an increase in these cells and a dilatation of the follicles without the presence of a colloid deposit. Since we have been administering iodine to exophthalmic goiters, previous to surgical resections, the microscopic picture has changed to one resembling a normal gland. This evidence alone strongly suggests that the condition known as exophthalmic goiter is due in part to a lack of iodine.

We have learned more about the thyroid gland from clinical observations of its abnormalities than from all previous studies of this gland in its normal condition. A further increase in our knowledge of the thyroid will doubtless only come from an increase in our knowledge of the normal gland, owing to the fact that clinical studies, based upon medical and surgical observations, have about reached their limit. Any study of any abnormality is greatly enhanced by a knowledge of the normal. Undoubtedly the thyroid gland in its normal condition differs in structure and formation through the various ages of the individual, viz.: (1) fetal; (2) infancy; (3) childhood; (4) puberty; (5) early adult life; (6) later adult life; (7) pregnancy; (8) during the menstrual epoc; (9) during the menopause; (10) after the menopause; (11) during the presence of other abnormal conditions; (12) in advancing age; (13) in senility. Furthermore, the gland must vary in function during the many hypo- and hyperphysiological processes of other departments of the organism.

Is there a condition of hypo- or hyperthyroidism existing before goiters appear? And are goiters merely a result of previous abnormalities? Why do not all individuals or all vertebrates in a goitrous district have goiters? They partake of the same food and water. May it not be one abnormality within the organism, perhaps within the alimentary tract and its diverticuli, as well as an absence of iodine or some other force? The thyroid at one time was connected with the alimentary tract and its extract is the only one of the endocrine which, when fed by mouth, carries out the function of the respective gland. The fact that goiters occur in families suggests an inherited deficient characteristic more than a lack of extraneous forces. The assimilation of iodine and its elimination may be largely via the alimentary tract.

A standardized classification of physiological phenomena, both normal and abnormal, is very difficult to accomplish in medicine owing to our tremendous lack of knowledge of the laws of nature. When we have reached a position wherein we feel that we can bring about a classification into, for example, A, B and C, we then must subclassify each division into subdivisions and then on to an endless number of further subdivisions. No group of men living suffer more from knowing things to be true which are untrue than those in the practice of the art of medicine. Ones knowledge is no more than an interpretation of one's contact with outside stimulation and one's empirical therapeutic results, in too many instances, lead him toward believing that he is arriving at a scientific conclusion. His so-called successful therapeutic endeavors are due in most instances to a resistance of the patient instead of a scientific antidote to the presented derangement.

When we have not a scientific classification of disease, we must, if possible, start with a clinical; and one of the divisions of medicine, which still must retain the latter is the non-malignant and non-infectious structural abnormalities of the thyroid gland—known under the vague term of goiter. The discrepancies of opinion over classification of goiters have been mainly connected with one division, the so-called toxic thyroid. This discrepancy may well be tolerated owing to the fact that (1) upon the present it has been impossible to determine whether or not a so-called toxic goiter is secreting too much of a normal secretion or is merely secreting an abnormal secretion, and (2) to the fact that toxic goiters often occur in two separate clinical types as well as presenting a mixture of both.

EXOPHTHALMIC GOITERS

The term exophthalmic goiter originated from a terminal result following a prolonged overactivity of the thyroid gland; producing marked hypertrophy of this gland and a protrusion of the eye balls. The same abnormal physiological activity, however, exists in the thyroid long before an enlargement of the gland and a protrusion of the eye balls occurred. The gland in this early abnormal state can hardly be termed an exophthalmic goiter, but for want of a more appropriate term it must for the present be retained. My studies lead me to believe that there are two types of exophthalmic goiters; (1) primary, and (2) secondary.

Primary exophthalmic goiter begins as such from a normal thyroid gland. Practically all of the thyroid acini show a structural change, e. g., a hyperplasia and a columnar hypertrophy of the cells lining enlarged acini. Some or all of the various clinical phenomena occur before or after an enlargement of this gland takes place. This must be kept in mind if early diagnoses of exophthalmic goiter, with or without the presence of a goiter or exophtlamos, are to be correctly made.

Secondary exophthalmic goiter originates from a previously existing goiter of the types known as the colloid and the adenomatous. These previously existing colloid and adenomatous goiters may at any time start to present symptoms of an exophthalmic goiter. Here we have one of the principle factors causing the present day dispute over the difference between a so-called toxic adenomatous and an exophthalmic goiter. Is there the same structural change in the normal colloid and fetal acini as is found in the primary exophthalmic goiters? I have found this change, viz.: a hyperplasia and a columnar hypertrophy of the cells lining the apparently previous normal, colloid, and fetal acini.

Exophthalmic goiters often go unrecognized owing to (1) a lack of exophthalmos, (2) to the absence of a marked enlargement of the gland, and (3) to the presence of a previous colloid or adenomatous goiter. As previously stated the term exophthalmic goiter is misleading and is waiting for a worthy substitute. The condition of the thyroid gland, structurally and functionally, which, early or late in the course of the disease, produces hyperplasia of the cells lining the follicles, an enlargement of the gland and protrusion of the eyeballs, may start in normal thyroid tissue and involve all or a portion of it; may start in a colloid tissue and involve all or a portion of it, and it may start within the so-called fetal adenomata and involve all or a portion of them. In this long sentence, I think, lies the origin of the present day discrepancies of opinion over the condition we might term toxic thyroidism.

The clinical phenomenon of exophthalmic goiter is greatly modified by the administration of iodine. As previously stated the clinical condition as well as the structural, within the gland, change toward the normal. This is so constant that the proper use of iodine may be safely considered as a specific therapeutic test for the presence of a primary or a secondary exophthalmic goiter. Since iodine has been found to modify exophthalmic goiters structurally and functionally, the value of the microscopic picture as a diagnostic step has been almost eradicated. In other words, the pathologist's opportunity to render a diagnosis after iodine has saturated an exophthalmic goiter has been almost done away with.

Is the clinical condition known as exophthalmic goiter always due to a specific structural change within the thyroid gland? This question is pertinent and at present lacks a correct answer. In the early stages of exophthalmic goiter, before a goiter and exophthalmos develop, there may be no structural change within the gland. In the later stages, after the gland has overworked for a great length of time, a hyperplasia and a hypertrophy of the cells lining the acini quite likely occur. This conclusion is based upon the influence of iodine upon exophthalmic goiter. After its use, when the patient clinically has returned toward normal and the structural change in the gland has returned toward normal, we have a condition resembling an early exophthalmic goiter or hypersecretion of a normal or almost normal product, which we might term hyperthyroidism.

THE ADENOMATOUS GLAND

Encapsulated or non-encapsulated nodules palpated or seen grossly within the gland are spoken of as adenomas. They are either encapsulated colloid tissue and of no significance, or more frequently they are areas of small or fetal acini. Where areas of fetal acini are seen only by the microscope they are either the origin of large or gross adenomas, the areas of reserve for the development of normal acini or are involution changes occurring after iodine or other agencies have reduced the large to smaller acini.

Gross and microscopic adenomas of the fetal acinus type are found within normal glands, within exophthalmic goiters and within colloid goiters. They may or may not over secrete a normal thyroid extract in any of the three types of glands just mentioned. If this is not kept in mind great confusion results.

The modern physician deserves a great deal of credit for his co-operation in the present day treatment of goiters. When convinced that surgery offered a safe and satisfactory method of obtaining relief, these cases were rapidly referred to the surgeon. No disease requires more co-operation than the pre-operated and post-operated goitrous patient. Proper preparation for the operation is necessary and following the resection of a goiter there is no more interesting condition for a physician to study. Goiters are not cured by surgery—they are only partially removed and abnormal as well as normal thyroid tissue in small amounts remain. The adjustment of the patient in general to this subnormal amount of thyroid tissue is a most interesting study.

I have performed 1517 operations upon the thyroid gland, beginning in 1909 at St. Francis Hospital, Grand Island, Nebraska. My mortality rate for my first 100 cases was 15%, and my last 100 cases, 0%. This great change has been due to the use of iodine in preparing exophthalmic goiters for surgery; to therapeutic altruism of many physicians who have referred me many cases in time for surgery, and to my increasing experience and judgment. I feel a great debt of gratitude to numerous physicians who have readily given up many patients and referred them to surgery when they could have improved them to an extent where they would have been apparently cured. Physicians have learned that these apparent cures or forced remissions are only temporary. Their position in the surgical treatment of goiters has, however, not been lost, in fact it has enlarged. The pre-operative care is most essential in cases of toxic thyroidism during the reestablishment of weight, strength and in the lessening of hyperthyroidism. The post-operative care is equally important and covers a greater length of time. Surgery, with the exception of those infrequent cases of an isolated cyst or adenoma, cannot remove all of the goitrous tissue. It must leave a certain or an uncertain amount to carry on metabolism, which remnant is never constant in its physiological activity. It may atrophy and allow a mild hypothyroidism to develop or it may hypertrophy and result in a recurring hyperthyroidism. Why these remnants should atrophy or hypertrophy in the presence of an ample blood supply is as mysterious as the original development of a goiter. Fortunately, however, these atrophic and hypertrophic changes in the thyroid remnants following surgery are most unusual. The physician, who understands the thyroid has a most interesting situation pre- which may or may not require the application sented to him following a surgical resection of artificial non-surgical physical forces.

DISCUSSION

CHARLES A. ELLIOTT, M. D. (Chicago): I was very much interested in what Dr. Roeder has to say about exophthalmos with normal metabolic rates. We have had an interesting experience in our group during the last few years. Men have attempted to remove more and more of the thyroid gland. I am convinced our surgeons are perhaps removing more than in some of the other clinics. Coincident with this time, we have seen eight cases of post-operative exophthalmos develop. We are beginning to believe perhaps the type of operation has something to do with it.

I have taken this matter up with other men of this country who are interested, such as Drs. Crile and Lahey and Plummer, and they cannot see why exophthalmos should develop in this country. There certainly is some factor about which we at the present time know nothing. It is unfortunate exophthalmic goiter should carry the name, because the exophthalmos is usually a late manifestation. We should make our diagnosis, on the whole, much earlier than the appearance of exophthalmos.

I believe exophthalmos is always unilateral at first. If you watch carefully its development, you will find it occurs more frequently in one eye and then goes to the other. In one of these eight cases we watched, it was very marked in one eye, and now, eight months later, it is about equal in both.

A. C. JOHNSON, M. D. (Omaha): I offer only as a suggestion the possibility that in some of these cases in which exophthalmos is present and the rate is below normal, there might be some of those occasionally sent in where exophthalmos has been present, and as a matter of course and because of the nature of the disease itself, it has subsided with a remaining exophthalmos. Occasionally the same thing occurs following thyroidectomy. There is marked reduction in rate; still, we note some exophthalmic symptoms—the eye signs. In these cases it is necessary to give thyroid extract as against Lugol's solution in order to bring the rate nearer normal and benefit the clinical and other manifestations which the patient has.

Of course, we do not know by what it is produced. This one point may be true. I have recently seen a case in which undoubted manifestations of exophthalmos were present twenty-five years previous, and the advent of the same disease again requiring thyroidectomy. Except in severe cases, exophthalmos does not come until nine months after the onset of the disease.

Dr. Roeder showed you the early relationship between the disease in the sexes. This point is gradually changing, and more and more males are becoming affected. Now the ratio is about the same as females.

You will still find recurring types of goiter when upon reoperation you encounter a smooth and virgin capsule behind, showing resection had been done through the superficial layers without going back deeply and doing a rather complete subtotal thyroidectomy.

DR. ROEDER (closing): In regard to what Dr. Elliott said, exophthalmic goiter as described by Dr. Gray in 1845 was a terminal condition. I think we should change our terminology, if we can. We must speak of exophthalmic goiter tissue which is stimulated by the gland following the infections which Dr. Elliott mentioned this morning, for instance, septicemia and peritonitis. The thyroid gland shows the same picture as exophthalmic goiter. Also in pregnancy. For want of a better term, we speak of exophthalmos. It is a term for a terminal stage. We must hang onto it for some time.

In regard to complete thyroidectomy, I believe it is almost impossible to take out every vestige of gland without injuring the nerve. I mean getting out all you can. I had a woman who had been operated on three times. I do not think it is unprofessional to mention it. It was at Rochester. Dr. Judd is one of the greatest surgeons in the world. She said, "The Doctor wouldn't take it all out. I would rather regulate my metabolism than to have a piece of tissue growing in my neck."

A lot of people can take sodium chloride. Some need more and others less. I have often asked myself this question: Why should one individual develop a goiter in a family when the others do not? They all have the same food and water. I feel it has something to do with elimination and assimilation. I saw an interesting family of seven girls with goiters, and the mother had one and the father did not. They had either three or five boys, and none had goiter. All had the same food and water.

CASE STUDIES IN GOITRE—NO. ONE*

ALFRED BROWN, M. D.,
Omaha, Nebr.

INTRODUCTION

The problem of typing the various manifestations of disease of the thyroid gland grouped under the generic name of goitre is one that appears to grow more complex day by day. New ideas are promulgated and new theories of the causation of this or that syndrome are evolved until the medical man, especially the physician in general practice, finds himself enmeshed in a maze of, to him, un-understandable and unproven hypothesis which, if followed, lead nowhere in particular and certainly to no definite or clear understanding of the subject.

The subject of goitre, however, does present to the physician certain definite and clear cut problems of a therapeutic nature. These can be defined as first, the indications for treatment, second, the best type of treatment to be instituted, and third, the progress as to result, both immediate as to life and death in surgical intervention, and ultimate, to determine how much improvement will be made by the patient and estimate the percentage return to complete normality.

It will be the object of this series of articles on goitre to attack the problem from the standpoint of the clinician in the light of our experience at the Hospital and Dispensary of the University of Nebraska, College of Medicine. A definite type of the disease will be discussed in each article, using a clinical case history as a text and successes and failures will be discussed freely and the reason for each will be determined, when possible.

THE COLLOID GOITRE

Colloid goitre begins, as a rule, in adolescence and in the middle west at least is much more common in girls than boys. It is a true enlargement of the gland and is not comparable to the temporary enlargement which occurs at the menstrual period and recedes to normal between periods. In itself it gives no constitutional symptoms of hyperthyroidism though in later years these may suprevene because nearly all of these goitres contain small areas where so-called adenomata of the thyroid may arise and through degeneration cause constitutional symptoms. Colloid goitre is, however, unsightly and constitutes a noticeable cosmetic deformity. It may grow to such size as to cause local symptoms of pressure, such as difficulty in swallowing and more rarely dyspnea. The colloid goitre does not degenerate and practically never becomes substernal, the tendency being to grow forward and present a rather marked groove between the lower part of the goitre and the sternum. It is affected only temporarily, if at all, by iodine and because of its unsightliness and danger of pressure symptoms should be removed surgically. It does not tend to recur after removal.

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*From the Department of Surgery, University of Nebraska, College of Medicine.

Clinical history. Case 24200. A school girl, aged fourteen years, applied at the hospital early in November, 1927, complaining of swelling of her neck which was first noticed four years previously. She has noticed no symptoms referable to the neck and aside from an attack of mumps on the right side one year ago has been an unusually healthy child. Three months ago menstruation began and has been normal. The patient was found to have a cold with some rales in the chest and was sent home with the request to return in a couple of weeks. During this period she was given three drops of Lugol's solution three times a day with a consequent rather rapid enlargement of the growth in her neck.

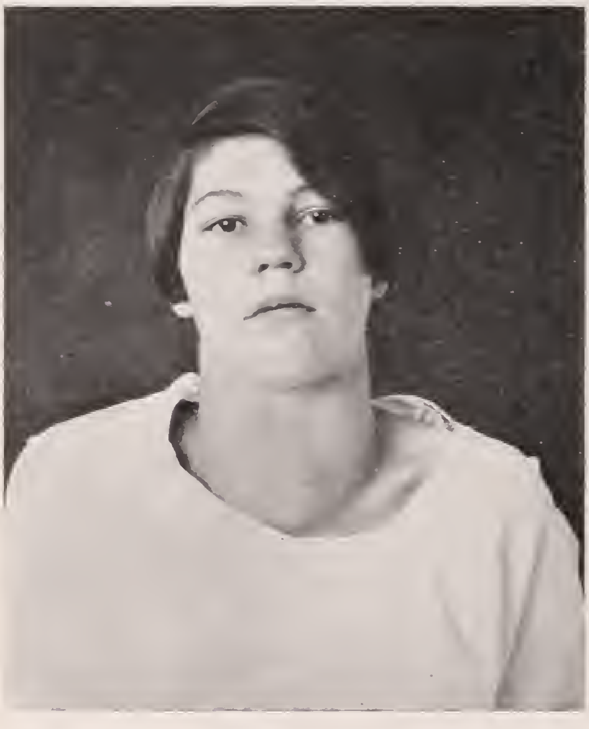

Fig. I Case 24200. Colloid Goitre.

She returned November 30, 1927, and was admitted to the medical service. A complete physical examination revealed no abnormalities except the neck. This was described as follows: "Cervical lymph glands not palpable. Thyroid: There is a bilateral enlargement extending over the anterior and lateral aspects. It is of firm consistency and smooth. No localized masses in the main enlargement felt. No thrills or bruits can be made out. Temperature 98.6, pulse 72, respirations 18. Weight 110¾ lbs. Neck measure 41 cm. Urinalysis: Sp. gr. 1,020 acid; alb. 0, glucose 0, microscopic examination shows r. b. c. and leucos. (menstrual). Blood examination. RBC 5,100,000. Hb 90%. WBC 12,000. Differential count. Polys. 76%. Lymphocytes 23%. Transitionals 1%. Wassermann test negative. Basal metabolic rates, December 5, 1927, 20%; December 12, 1927, 15%. The patient remained under treatment in the medical wards from November 30, 1927 to January 2, 1928. The Lugol's solution was stopped and she received thyroid extract grs. ij t. i. d. and later grs. vij o. d. with no change except the gland fell to a measurement of 39.00 cm. As there had been a history of gland enlargement during the two weeks the patient took iodine it is difficult to determine whether the slight diminution in size was due to the withdrawal of iodine or the use of thyroid extract.

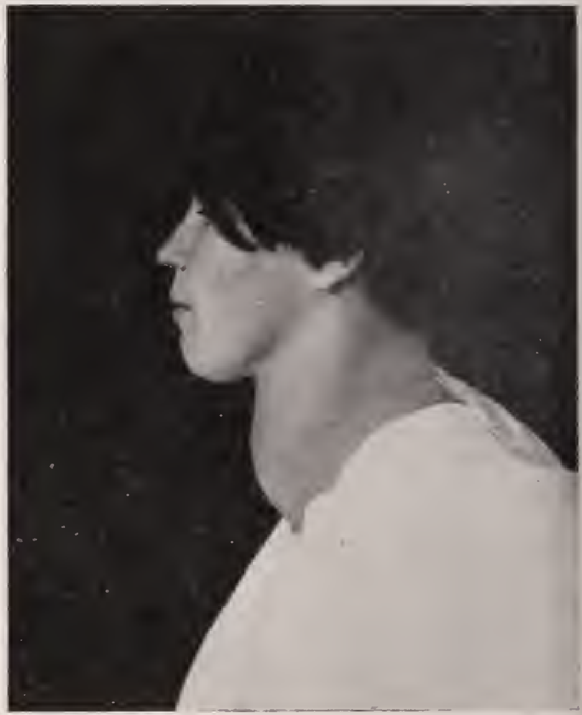

Fig. II. Case 24200. Colloid Goitre.

On January 2, 1928, surgical consultation was requested, operation advised, and she was transferred to the surgical ward. The thyroid extract was discontinued and on January 5, 1928 the basal metabolic rate was 0%.

Operation was performed January 7, 1928, a subtotal thyroidectomy being performed under paravertebral anaesthesia with infiltration of the skin of the neck at the site of incision. One-half per cent novocain was used.

At the beginning of the operation the pulse was 88. Shortly after the start of the operation the patient became cyanotic and had several generalized convulsions which were quite alarming though the pulse continued regular and of good volume. She was immediately placed under nitrous oxide anaesthesia and the operation completed without further accident. At the close of operation pulse was 150 and blood pressure 125/65.

The cause of the convulsion was probably the injection of a considerable quantity of novocain directly into a vein. At the time I was using ½% novocain for paravertebral injection and found it necessary to infiltrate the skin for the skin incision. It has been found that novocain ½% does not have the effect of slowing the pulse by paravertebral injection and consequently I now use 1% novocaine for the paravertebral injection and find that infiltration of the skin is unnecessary except for the final closure when it can be injected under direct vision and large blood vessels avoided. It also has the advantage of slowing the pulse rate.

Convalescence from operation was uneventful. On the fourth postoperative day she was given Lugol's solution mij t. i. d., p.c. and thyroid extract grs. mij t. i. d. in order to hasten the return of the remnants of the gland to normal. She was up on the seventh postoperative day and discharged on the ninth. About five-sixths of the thyroid had been removed.

THE PATHOLOGY OF THE GLAND

"Gross description. The specimen consists of a large thyroid gland weighing 300 grams. The left lobe is about 9 cm. long and 4.5 cm. in diameter. The right is 12.5 cm. by 5 cm. and the isthmus is 8 cm. in vertical diameter, 4 cm. wide. The outer portion of the gland appears glistening, smooth and shiny. The sectioned surface is much lighter in color than is normal and it immediately becomes shiny and moist with escaped colloid material. Many cysts are easily seen with the unaided eye protruding from the sectioned surface. The posterior capsule and portion of the gland are not present. Wrapped in a separate bit of gauze is a second specimen from the same patient—a small round adenoma about 3 cm. in diameter. This is soft in consistency. It is fixed without sectioning.

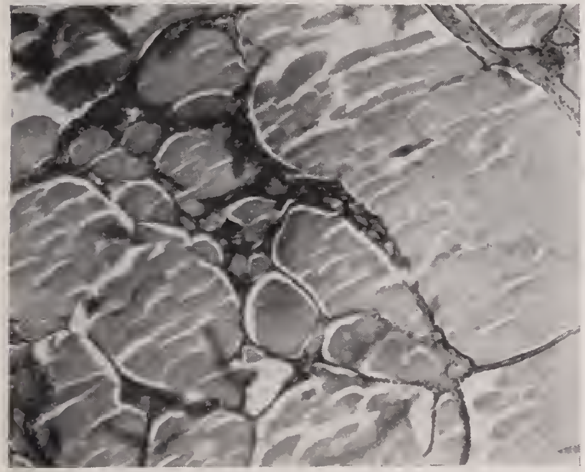

Fig. III. Case 24200. Colloid Goitre. Photomicrograph of gland removed at operation, low power. Note the excess of colloid and the enormous size of the alveoli with the consequent flattening and thinning of the interalveolar stroma.

MICROSCOPIC DESCRIPTION

Sections are taken from six different blocks from different parts of the gland. They all show huge acini much distended with colloid. The colloid all stains with eosin but some of it is faintly staining. The acini are lined with cuboidal epithelium for the most part but in a few small areas the epithelium tends to be columnar. There is no lymphocytic infiltration. There is no infolding of the epithelium. There are no mitotic figures. Some of the epithelium is flattened by pressure. There are no groups of epithetical cells atypically arranged in the stroma without acinous formation. After the tissue was fixed in Kaiserling's solution great numbers of crystals were noted on the sectioned surface."—Signed A. J. Miller.

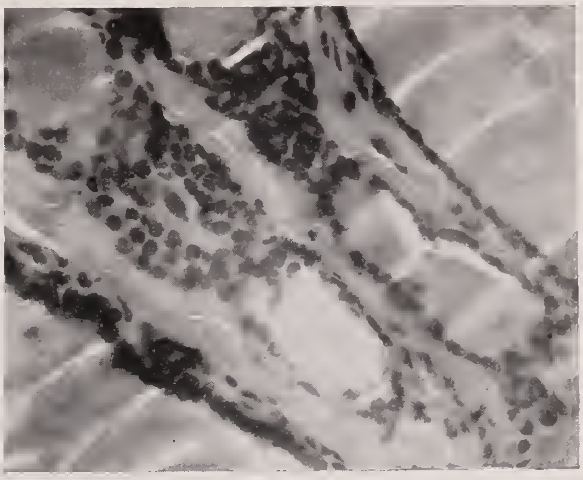

Fig. IV. Case 24200. Colloid Goitre. Photomicrograph of the gland removed at operation, high power. Note the flattening of the epithelium lining the alveoli due to pressure of colloid, and the normality of the lymphoid elements in the interacinar connective tissue.

There are several interesting and important findings in this practically typical case of colloid goitre.

First. It was not pure colloid goitre. Very few of them are. There was an adenoma found deep in the gland after removal of the major portion of the growth. It is consequently important, after removal of the main growth in all thyroidectomies to examine the stump of each lobe carefully for any small adenomas that may be present. Second. There was no evidence of hyperthyroidism either symptomatically or on examination. The cardinal signs clinically were absent and the physical and laboratory examinations showed normality in every factor that was examined; viz: a normal weight, a slight relative polymorphneuclear leucocytosis which is exactly the opposite of that found in hyperthyroidism, and a normal basal metabolic rate. It is unfortunate that a gastric analysis was not made to determine the presence or absence of free hydrochloric acid, but examination of several cases of this character shows it to be normal and in this case there was no reason to suspect that it was otherwise. Third. Attention was called in a no uncertain manner to the care that must be observed to avoid large blood vessels in performing subcutaneous injection of novocain.

WAS HE INSANE?

"They tell me he drowned himself in Paris."
"Yes, he went in Seine."—Amherst Lord Jeff

PERSONAL EXPERIENCE WITH SPINAL ANAESTHESIA

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(CONCLUSION)

Preparation of Patient. Prepare the skin with ether and 5% picric acid in alcohol and cover the broad area with towels. The tap is invariably carried out between the first and second or between the second and third lumbar vertebrae. In my early experience with spinocain I withdrew exactly the amount of fluid it was proposed to inject, that is from twenty-five to thirty drops. This technique is satisfactory for a low anesthesia such as is required in work on the lower extremities or the lower abdomen. It will be found, however, that if it is desired to secure high anesthesia that it is necessary to withdraw slightly more of the fluid than it is proposed to reinject. Thus, if an anesthesia is desired in the upper abdomen I have found that it is necessary to withdraw from forty to forty-five drops of spinal fluid when one proposes to inject thirty drops.

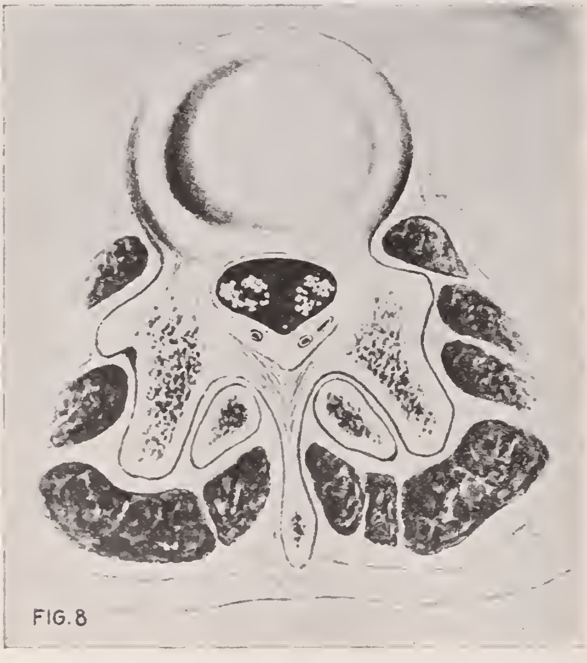


FIG. 8

Figure 8. Horizontal section at level of fourth lumbar vertebra to illustrate spaces between bilateral bundles of cauda equina. Lumbar puncture should be directed toward space in median line to avoid injury to nerve roots. (From Frazier, Surgery of the Spine & Spinal Cord. D. Appleton & Co., N. Y.).

It is necessary, also if one desires to secure high anesthesia to aspirate and reinject. To illustrate, if I desire to do a gallbladder operation and the patient weighs 175 pounds I do the tap between the second and third lumbar vertebrae. I withdraw between forty and forty-five drops of cerebrospinal fluid. I inject 2 cc of spinocain. I then aspirate 2 cc and reinject. The needle is then withdrawn and the patient turned upon the back.

I do not put the patient in the Trendelenburg position at any time as is advised by some of those who use the hypotonic solutions. I have not found it necessary. Neither have I found it necessary to take into consideration the lumbar and dorsal curves in considering the diffusion of the fluid. I believe with the withdrawal of a larger quantity of the fluid than is reinjected and the aspiration and reinjection one can be fairly sure of the diffusion of the fluid. Usually the solution reaches the fifth dorsal root which is necessary for high abdominal work and this without taking into consideration the normal curves of the spine.

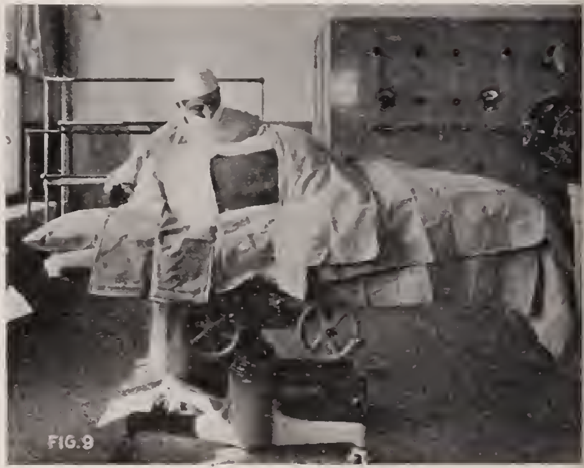


FIG. 9

Figure 9. Position of patient on table for induction of anesthesia.

If one uses neocaine, one or two decigrams of the drug should be dissolved in 4 cc of cerebrospinal fluid, depending upon the length of anesthesia desired. One decigram will give satisfactory anesthesia for forty-five minutes below the diaphragm, two decigrams for one and one-half or two hours. It is usually necessary to aspirate 8 cc and reinject once to secure diffusion of the drug.

I have had a fair percentage of failures. Certainly not as many latterly as in my early experience. Yet, one Sunday within six months, I failed utterly to secure anesthesia with spinocain in two cases of acute appendicitis though the tap was made without difficulty and the usual technique employed. Practically every failure can be attributed, however, to an error in technique and not to a failure of novocaine to act upon nerve tissue when properly placed. Sense of pain disappears first under spinal anesthesia. It is not possible to always eliminate sense of pressure or touch or traction in my experience. Many patients declare that they feel the pressure of the knife when the incision is made and some of the intra-abdominal manipulations but they do not suffer any pain. For this reason I believe that the preoperative medication is highly important for even a small dose will minimize the apprehension that nervous individuals develop when they feel the surgeon's maneuvers even though they are suffering no pain. Those of you who have done a considerable amount of work under local infiltrative anesthesia will testify that some patients become unmanageable even though they are suffering no pain merely because of the apprehension that they will be hurt.

PHENOMENA ACCOMPANYING ANESTHESIA

In order to understand some of the phenomena that accompany spinal anesthesia it is necessary to have a conception of the action of the drug and its diffusion within the dural sac.

Experiments with dyes apparently show that novocaine will penetrate only the outer membrane of the cord. It deeply impregnates the spinal nerve roots and the cauda equina even for a distance of about 2 c. m. beyond their exit from the foramina. The drug first blocks fibers which give pain and temperature sense for skin and viscera which are rather poorly localized and which require strong stimuli to secure reaction. Fibers which carry impulses of pressure as I have indicated above are among the last to be anesthetized. Sympathetic nerve fibers are also affected somewhat late. It will be seen, therefore, that the loss of the sense of pain is most complete and lasting and that those nerve fibers which cause vasoconstriction are the least completely and the least permanently affected. To summarize then, one may say that there is with spinal anesthesia first a loss of sense of pain, then tactile sense, then temperature sense, then motor sense, then muscle power and finally vasomotor control and as the anesthesia wears off conduction through nerve fibers returns in reverse order in which they are lost. Ideally spinal anesthesia would block sensory or posterior roots and not interfere with motor or anterior roots. Posterior roots are more readily blocked because these roots lie more laterally and because intra-arachnoid trabeculae prevent, to an extent, anterior diffusion.

It will thus be seen that the physiological action of the drug is dependent upon the number of roots involved and the extent of their involvement. If one secures in a high anesthesia involvement of the posterior roots from the fifth dorsal down to the third lumbar there will be an anesthetization of a correspondingly large number of anterior nerve roots with splanchnic paresis and consequent fall in blood pressure.

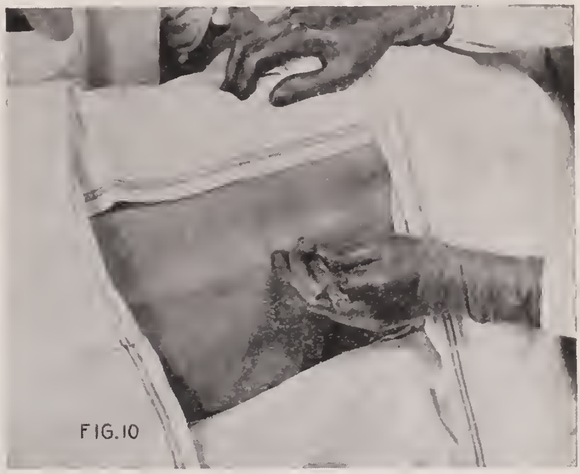


FIG. 10

Figure 10. Preliminary injection of ephedrin-novocain solution.

Pitkin's technique, originally at least, represented an effort to secure a more or less viscous, or perhaps better described non-diffusible fluid, which was controllable in the dural sac by alterations in the position of the patient. Selective action upon posterior spinal nerve roots limited to the operative area by injection of the anesthetic fluid in the dural sac is not yet possible. We are able by means of dosage and alteration in the character of the fluid, by withdrawal of cerebrospinal fluid and change of the position of the patient to fairly well determine the height to which the anesthesia will extend. We are able also by means of ephedrin to overcome to a degree the extreme drop in blood pressure that usually accompanies high anesthesia.

APPEARANCE AND DURATION OF THE ANESTHESIA

In some patients the anesthesia appears almost as quickly as the patient can be turned upon the back and the operative field prepared. It appears, as might be expected, first in the lower extremities for the initial injection which represents the greatest concentration of the drug strikes these nerve roots. The time of the appearance of the anesthesia is delayed as the relatively higher areas are reached for the drug is in less concentration and has made its way to the higher levels at a comparatively more recent time. The higher anesthesia will disappear more quickly for the concentration is less and the amount of the drug fixed within the nerve tissue is relatively less and one will note that it will be necessary to infiltrate the upper abdominal wall to secure closure while there still remains complete anesthesia in the lower extremities.

In some cases the appearance of the anesthesia seems delayed with spinocain. I have waited as long as thirty minutes for skin anesthesia and have opened the abdomen under gas or ether only to find that there was total anesthesia and the operation could be completed without difficulty.

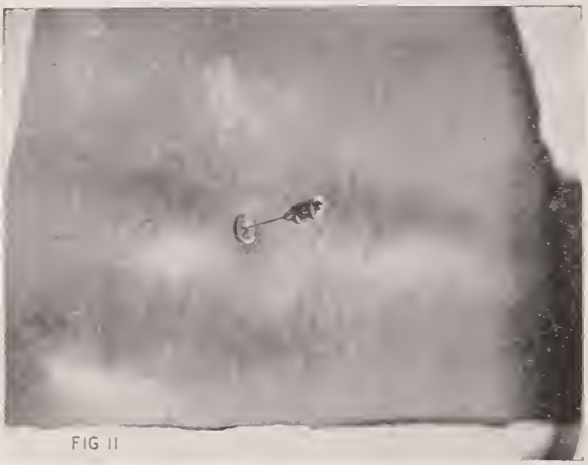


Figure 11. Sise guide and needle inserted with stylet withdrawn.

This delay in the appearance of anesthesia is ventured as one of the major objections to the use of spinocain.

PHYSIOLOGY OF THE FALL OF BLOOD PRESSURE

Normally blood pressure is maintained by vasoconstrictive impulses which are conducted by the sympathetic nerves but which have their origin in the medulla where they are controlled by vasomotor center. These fibers leave through the anterior roots of the dorsal cord region where they pass through the ganglia of the sympathetic trunk, one of which lies on each side of the vertebral column. The fibers supplying the abdominal viscerae leave the cord with the lower seven thoracic and the second and third lumbar nerve roots uniting to form the solar plexus in part making up the splanchnic nerves. These splanchnic nerves are the most important vasoconstrictive center in the body and vaso dilatation of this area will allow practically all the blood to collect therein. The fall in blood pressure is proportional to the number of nerve roots involved. It is evident that the higher the anesthesia extends the greater the drop in blood pressure which will occur.

PHYSIOLOGY OF THE SLOWING HEART

The heart has an intrinsic nervous mechanism. Additionally, impulses are sent from other parts of the body. One set of impulses comes from the medulla from which arises the vagus or inhibitory nerve. Another set comes from the spinal cord to form the sympathetic or accelerator fibers. In high anesthesia, the sympathetic fibers being paralyzed, the vagus or inhibitory nerve has undisputed control and the pulse is correspondingly slow. This explains why, in the face of an impending circulatory collapse, under spinal anesthesia the pulse rate does not rise and why an inexperienced anesthetist will report a patient's condition as good on the basis of a slow pulse when as a matter of fact they are in extremis.

Phenomena accompanying spinal anaesthesia.

1. Loss of pain sense though pressure sense remains.
2. Fall in blood pressure.
    Pressure maintained by vasomotor center in medulla which is isolated.
    Impulses leaving through anterior roots into sympathetic ganglia.
3. Bradycardia.
4. Moderate respiratory depression.
5. Increased peristalsis.

Figure 12. Table showing some of the phenomena accompanying spinal anesthesia.

PHYSIOLOGY OF RESPIRATORY DEPRESSION

Normal respiration presumes movement of the muscles of the diaphragm, intercostal area, abdomen and even the alae of the nose and the larynx. Its rhythm is conditioned by the needs of the body as a whole. Usually those cases of spinal anesthesia that show respiratory depression result from a paralysis of the abdominal muscles. Their part in respiration ceases but the thoracic and diaphragmatic muscles are adequate to meet the needs.

As a matter of fact both the intercostal and the abdominal muscles may be paralyzed without danger of diaphragmatic disturbance, the diaphragm being chiefly supplied by the cervical roots. It is only in the gravest cases that any danger from suspended respiration takes place and it is then not usually because of muscular paralysis but because of circulatory collapse and insufficient oxygenation of the medulla.

PHYSIOLOGY OF INCREASED PERISTALSIS

It is interesting to observe the active peristaltic movement seen under spinal anesthesia. The intestines are under control of three systems of nerve fibers. First, the myenteric which we know as Auerbach's and Meissner's plexus. This nerve system is intrinsic and continues its activity when the central nervous system is blocked off. Second, the parasympathetic system which arises from the mid brain and the sacral portion of the spinal cord. Stimulation of the parasympathetic system or uninhibited control causes increased peristalsis of the small bowel, the ascending and transverse colon. Third, the sympathetic system which arises from the lower thoracic and upper lumbar segments of the cord. This system has an inhibitory influence on intestinal movement, disturbance of which, in my opinion accounts for the gaseous distention which often follows peritonitis, hemorrhage and laparotomy. The active peristaltic movement shown by Alvarez in films made with animals in which splanchnic block had been induced is often seen in patients laparotomized under spinal anesthesia. It is due to removal of inhibition normally brought about by the sympathetic system, which is removed under either splanchnic or spinal block.

Thus opinion that gaseous distention is much less frequent following laparotomy under spinal anesthesia than under other type of anesthesia is at once shown to have a physiological basis and the clinical observation that paralytic ileus can often be relieved by spinal anesthesia is also shown to have rational basis. I have not had the opportunity to employ spinal anesthesia in any grave case of paralytic ileus but there are favorable cases reported by Studdiford of New York and by some of my professional friends as well as foreign observers.

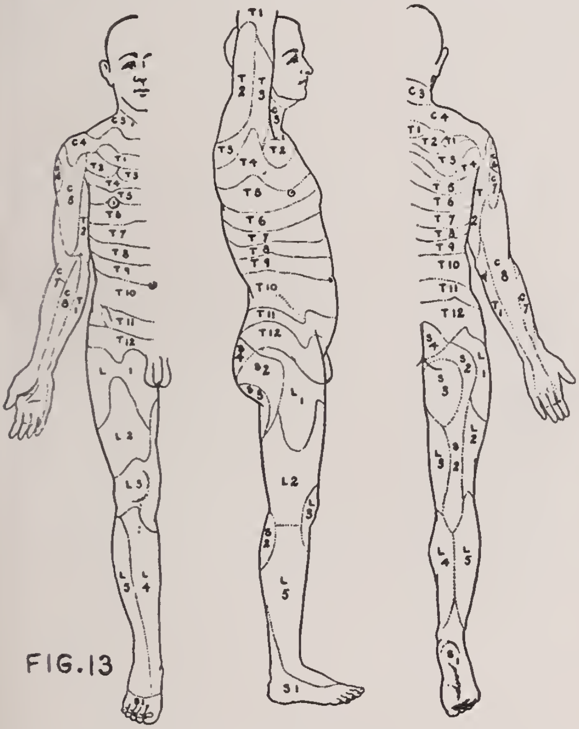


FIG. 13

Figure 13. Drawing showing cutaneous segmental areas. (From Fraxier, Surgery of the Spine and Spinal Cord, D. Appleton & Co., N. Y.).

Another desirable factor is the relaxation of the anal sphincter which is controlled by the pelvic nerve arising from the second, third and fourth sacral roots which are, of course, anesthetized in every case. This facilitates the passage of gas.

POSSIBLE COMPLICATIONS

Practically all complications can be explained on a physiological basis and usually they can be foreseen and prevented. If one always employs the same drug, the same technique with the same operating room force the undesirable factors of the anesthesia will be practically eliminated. The immediate complications are practically all due to a fall in blood pressure and if the technique employed eliminates or minimizes this factor comparative safety will have been attained. This fall in blood pressure results in an acute bulbar anemia. It can be anticipated by frequent readings on the sphygmomanometer and in all of our cases the pressure is taken before the anesthesia is induced and at three to five minute intervals constantly while the patient is on the table. The idea that spinal anesthesia makes it possible to dispense with one of the operating team is erroneous for it is as necessary that the patient be watched by a trained observer during the spinal anesthesia as it is that an anesthetist be at the

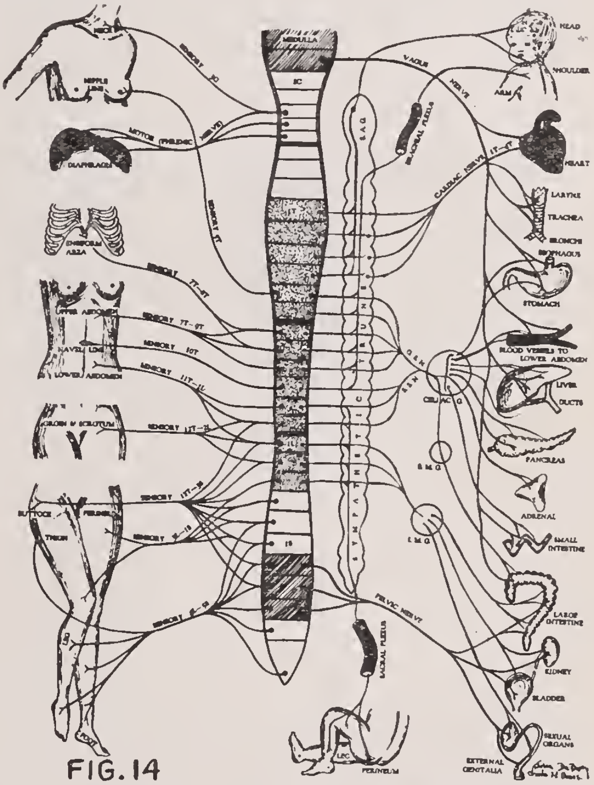


FIG. 14

Figure 14. Diagram showing cord levels for efferent sympathetic and efferent parasympathetic nervous systems and afferent sensory spinal nerve distribution. (Modified after Myer & Gottlieb.).

head of the table during the administration of gas or ether anesthesia. Extreme drop in blood pressure immediately manifests itself by nausea, sometimes vomiting, pallor, air hunger, and a slowing of pulse and respiration. With extreme collapse the whole splanchnic area is filled with blood and the blood pressure may fall to zero.

In these cases the head of the table should be immediately dropped and adrenalin given either as an infusion in the vein or full strength into the vein. Oxygen and carbon dioxide are valuable. In practically every case the drop will occur within the first fifteen minutes after the injection of the novocaine or if the patient is suddenly moved on the table. Our records will show that the sudden resumption of the flat position after the patient has been in the Trendelenburg position sometimes immediately causes a fall in blood pressure and it is to be avoided. Also to be avoided is any elevation of the head when the patient is being transferred from the table onto the cart and from the cart into the bed.

All our patients are placed in beds with blocks under the foot for twelve to twenty-four hours after the operation though I do not feel that this is entirely necessary. The fall in blood pressure, as will be shown by our records, usually lasts fifteen to thirty minutes after which it gradually approaches normal.

The patients are not shocked, at least not in the usual operative sense of the word, since all afferent impulses are blocked and an unusually smooth convalescence is made. Our records show that frequently systolic pressures of sixty are recorded though the preoperative reading may have been as high as 180. If the systolic pressure drops below 50 degrees of mercury I usually place the patient in the Trendelenburg position. I have not found, except on one or two occasions, that it was necessary to use any form of stimulation or vasoconstriction. On a few occasions I have given ten minims of adrenalin intravenously.

In a few cases, as previously noted, a second dose of ephedrin was given. This, I think, is bad practice for reasons I have already advanced.

Intermediate Symptoms. Headache: This has been in the past the most common and the most disturbing complaint of the patient following the return to bed. I have kept accurate record of the cases in which I have used spinal anesthesia and I am convinced that there has been no unusual percentage of patients who have complained in this manner.

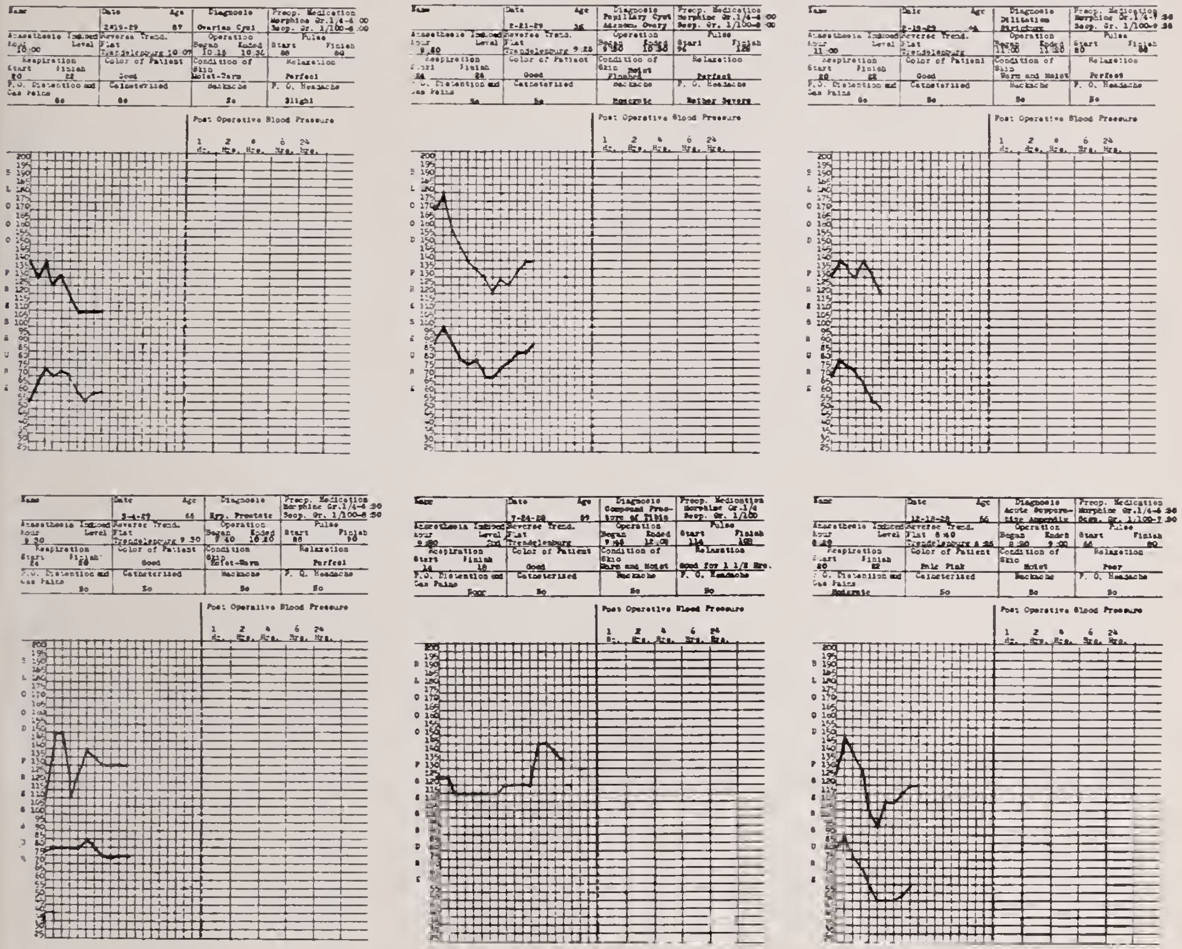
The headache is allegedly due to leak of the cerebrospinal fluid through the opening in the dura at the site of puncture. I believe that it can be largely, if not entirely, eliminated by the use of small needles and keeping the foot of the bed elevated for the first twenty-four hours. A very few of the patients on whom I have used the anesthesia complained of the persistent headache sometimes seen following lumbar tap even though no anesthesia was used. I do not consider it a symptom to be given serious consideration when one is determining the availability of spinal anesthesia.

Backache: There has been no unusual complaint of backache in any of these cases and, indeed, I believe this complaint has been less frequently encountered than in those cases in which other form of anesthesia was used. There has been occasional complaint of soreness at the puncture site but the disturbing ache from the flattening of the lumbar curve on the hard table so frequently encountered in deep ether anesthesia with wide spread muscular relaxation is almost entirely eliminated.

Stiff Neck: I have not encountered this symptom. It would, of course, if met with be due to some form of meningeal irritation.

Late Symptoms: *Palsies*: I have had no paralyses or palsies of any type following the employment of spinal anesthesia with the technique I now employ. One of the most disturbing is a paralysis of the abducens nerve usually appearing the second week after operation. In the many hundreds of cases in which I saw spinal anesthesia used two years ago there was no after ocular muscle palsies and the chief of the clinic informed me that he had never had such complication. That it does occur, however, is established though it is only temporary. It is not known why the abducens nerve should be affected more often than any other nerve. Possibly it is due to a special susceptibility and possibly it becomes paralyzed because of its long passage through the spinal fluid. The complication is not serious though very disturbing because of the diplopia which results.

Another type of palsy is due to trauma at the site of puncture. I have mentioned an experience I had about eight years ago and which considerably dampened my early enthusiasm for spinal anesthesia. The tap was made with the patient in the sitting position and a large needle used. A bloody fluid was obtained. The patient never voided as long as he remained within my care and that of an eastern surgeon whom he consulted about three months after the operation. It is evident to me now that some direct trauma and probably a hemorrhage of the nerve tissue resulted in this case and it would, I am sure, never have occurred with the technique now employed. The persistent headache has already been considered.



9:45 Patient nauseated.

FIG.15 Perfect anesthesia with no unusual bleeding either at time of operation or later.

After about two hours it was necessary to induce gas anesthesia.

At 8:30 Novocain 1% necessary to infiltrate peritoneum of abdominal wall for closure.

Figure 15. Charts showing blood pressure reading during anesthesia and post-operative data.

There is, of course, the danger of the development of a meningitis but a careful technique eliminates this so far as it is humanly possible to eliminate any of the complications of surgery. In this series there has been no case of meningitis or unusual meningeal irritation.

It is desirable to again call attention to the danger of inducing spinal anesthesia in cases of general sepsis.

It would be unreasonable, of course, to assume that spinal anesthesia is generally applicable even to those cases of surgery below the diaphragm in which, as a matter of fact, a satisfactory anesthesia can nearly always be obtained. The limitations imposed by age, temperament, serious cardiac or vascular disease require careful evaluation of the availability of the anesthesia in each and every case. Never before, however, has the technique been as well developed as it is at the present time. Heretofore, and even at the present time, there exists prejudice against this form of anesthesia because of improper methods in its use and entire ignorance of its contraindications. Most of us know of surgeons who have condemned gas anesthesia after two or three trials with an unskilled anesthetist in unsuitable cases and an equal number of surgeons condemn spinal anesthesia after having employed it two or three times with a poor technique in cases in which it was contraindicated.

Ether anesthesia, which has been dignified, but not sanctified by long usage, remains the most generally satisfactory and safest form of anesthesia, because it is volatile and gives a wide margin of safety. The gas anesthesias properly used in proper cases are likewise very satisfactory though gas anesthesia improperly given is, of course, much more dangerous than ether anesthesia.

There is no finality in the opinions I have expressed on spinal anesthesia. I have not used it as yet in a sufficiently large number of cases to know just where I will place it as a method of anesthesia in my surgical work. That it is the most desirable and safest form of anesthesia for some types of surgery I am convinced but it should be employed by the experienced only in a selected group of cases with a clear comprehension of its dangers and a thorough knowledge of the measures used to combat complications that may arise.

DISCUSSION

DONALD MACRAE, M. D., (Council Bluffs): I rise to second the evidence so beautifully brought before you today by the essayist. I do not know I can emphasize anything other than to remind you this spinal anesthesia has been somewhat in disrepute over the past twenty-five years. I have been afraid to put something into the canal I could not get out. I have seen disastrous results which caused me to put a ban on spinal anesthesia until I became interested in the Pitkin proposition. We are on our two-hundredth case, and I want to verify the statements made by Dr. Duncan.

As far as I am concerned, I could go a little further in the hypotension cases. We are not afraid of using it in this class of cases. I think the whole thing is in following out the technique. There are all kinds of ways of using this method. There is novocain and novocain. You must differentiate between the kind with a specific gravity lighter than the ordinary fluid. We had a death in Council Bluffs. It is objectionable because of the amount of time you have to wait before the patient is ready. You get in a hurry. This doctor had performed two or three operations with spinal anesthesia by allowing the patient to sit up. I told the doctor that he was not following the technique advocated by Pitkin a few years ago. He injected while the patient was sitting up on the table. Within fifteen seconds the patient was dead. There was a death in Omaha by one of your prominent surgeons. I said to him, "How did it happen?"

"I had him on the table."

"Was the head down?"

"No."

"What was his blood pressure?"

"We were not taking it."

It must be taken all during the operation. We must keep the patient down, because it is controllable anesthesia.

I have performed a number of operations where the patient would have died under general anesthesia but recovered with the other. One old man did not pay any attention to the operation, a simple appendix. I believe with a general anesthetic he would have died on the table. While there is a certain risk, many patients will recover who probably would die with general anesthetic.

I feel these errors in technique should not be laid against the operation. As I told this gentleman, a man may aim at a mark and pull the trigger. If he turns the gun this way (indicating toward him) and pulls the trigger, that's an error in technique.

J. FREDERICK LANGDON, M. D., (Omaha): My experience with spinal anesthesia has been satisfactory. There is one therapeutic advantage I want to relate to you in its use. This was a case in which, following an intestinal incision, the patient developed an ileus. His condition was very bad, with a temperature of 102 degrees; pulse 156, weak and irregular; complete obstipation and great distention, showing signs of early death. We used the usual things—salt solution, glucose, and lavage. Knowing from our study of spinal anesthesia that the sympathetic system inhibits peristalsis, and that the anaesthesia put the sympathetic system out of commission, we injected 2 cc in the spinal cord. This was done at eleven o'clock in the morning. In an hour there was no change. By ten o'clock that night the abdomen was perfectly flat, and the patient passing gas. The pulse was 120 and regular. Next morning he was in better condition and went on to a recovery.

I think it is a procedure well worth keeping in mind in any case of ileus. I believe it is founded on logic, and in this case it seemed to work.

J. E. SUMMERS, M. D., (Omaha): I have been using spinal anesthesia sporadically for a number of years. I had given it up until I watched Dr. Macrae do some work which could not have been done under general anesthesia. I have been using the Pitkin method and have adopted it for general anesthesia in general cases. I have done amputations of the breast, and goiter operations. You can take out a tongue with general anesthesia. I use novocain in 8 cc of spinal fluid and produce a general anesthesia with just as much safety as ordinary work below the diaphragm. It is uncanny to think you can do that and put a needle clear through a patient's ear or cheek. I have done it in three hospitals—Clarkson, the County, and the University hospitals. I did a radical amputation of the breast with spinal anesthesia. I dislike to be outdone by my younger colleagues.

DR. DUNCAN, (closing): The head is kept down for twenty-four hours after they go to bed.

The ordinary sized needle is the best one of all, I think. I use this guide to find the dural sac. Never make a tap from the side. There are very few blood vessels in the median line and many if one goes in laterally. It is an error to get a high anesthesia by giving a high tap.

It is difficult to get into older people, but you can if you show patience enough.

I do think it is controllable to the extent of putting it just where you want and keeping it there. I have to depend largely upon withdrawal of the fluid to get a diffusion.

ACUTE GLANDULAR FEVER OF PFEIFFER

In an epidemic of the acute glandular fever of Pfeiffer reported on by Clara M. Davis, Chicago (*Journal A. M. A.*, April 27, 1929), all the infants and one nursemaid in a small nursery were affected. There was wide variation in the severity of the cases, but all conformed closely to the description of Pfeiffer. Lymphocytosis appeared early in the incubation period. Relapses occurred in the usual large percentage of cases. Suppurative complications occurred only in infants with mixed infections. Recovery within four weeks, with a return of the glands in their preepidemic size and condition, was the rule.

MENTAL HYGIENE OF ADOLESCENCE

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That the adolescent youth requires psychological guidance of a nature that he does not get and cannot get in school, is widely admitted. What this guidance is to be, and who is to give it, is not nearly so obvious. This paper contains some suggestions as to the nature of the guidance; and is being offered here, because the physician, next to the parent, is the most logical individual in the community from whom the guidance may be expected. Even the parent, must depend, outside of a little popular reading, for his conceptions upon the instruction of the physician. Yet, as a matter of fact, the average physician does but little thinking on this matter. Very little literature on the subject comes his way; indeed, very little literature on the subject exist, outside of case reports. The following few fundamental principles have been developed from the case reports in the literature, and from a large mass of personal observation.

Adolescence is the most trying and difficult period through which the individual passes. At this age he has achieved a conscious recognition of life's problems and situations to their fullest significance; some of them confront him or loom on ahead terrifyingly inscrutable; and as yet, he lacks the ability and experience to solve them and to deal with them. Because he is approaching the stature and physical attributes of an adult, adult behavior is expected of him, and he is as yet unable to furnish it properly. He sees the ties of childhood slipping; the security and protection and material affection from parents, home, and family, are no longer what they once were. The new situation of family love and intimacy from an adult standpoint is yet far off. Even ordinary economic independence is still an unsolved difficulty. He is very much alone in the world. Given a sensitive nature and a lack of tact in those with whom it comes in contact, and it is no wonder that tragic situations result.

The mental hygiene of this period may be considered under two aspects. First there is the effort to secure a normal mental adjustment in the individual during the period of adolescence. Whether or not the adolescent boy or girl has normal and stable mental reactions and behaves normally, depends entirely upon early childhood training. What the parents do with the child before it is six years of age determines what the boy or girl will be doing from the age of fifteen to twenty. Time and again have I said and written that instead of feeling a smug pride in our corrective work with the juvenile court and social service, we owe apology and restitution to the young people whom our neglect and carelessness has permitted to get into situations requiring such attention. It is *our* fault that the young people get into the courts; and that they do the things that get them into the courts.

This discussion is no place for the details of the mental hyigene of early childhood. There is plenty of good literature in existence upon that subject. But I wish to take up some of the items in child-training psychology, merely to show their bearing on adolescent behavior.

1. If parents themselves cannot set an example of honesty, temperance, frugality, and industry to their very small children, they must not be surprised at the lack of these qualities in the adolescent. The father who dodges his taxes or watches out of the back car window for the speed-cop, may logically expect to have a boy who bootlegs and "borrows" strangers' cars for joy-rides. A little lie or a little dishonest act before a small child will increase during the years of growth, and come out as a serious misdeed in later periods.

2. If parents treat a child arbitrarily or unreasonably, they can only expect an unstable disposition in the adolescent as a result. From the age of two years, the child lives its own mental life, filled with plans, worries, fears, desires, and reasons. The parent must sympathize with these and take them into consideration. The thoughtless crossing and clashing of the parent's ideas with the child's inner life is responsible for a vast number of neurotics, inefficients, and even criminals.

3. The child is an individuality in itself. It is neither natural nor reasonable to expect a child to live and act in every respect merely to amuse the parent or to imitate the parent. Neither is a small child a toy, to be tickled, and caused to perform and go through its tricks. Most important of all, a child must be permitted to act on its own initiative; many parents insist on doing everything for the child to the smallest detail, and thus keep it dependent as long as possible. Neglect of these considerations is the cause of many youthful scrapes, of much inefficiency, timidity, and inferiority complex.

4. The child needs systematic guidance, not

constant correction and repression. To let a child go unnoticed until its actions have caused the parent to become irritated and angry, and then to institute impulsive and illogical corrective measures, is to lay the foundations of instability during later life.

5. The average small child prefers the companionship of its parents to that of anyone else. Talks and confidences, work and play together from the earliest years, are the only possible foundation for a successful control during adolescence. If the parent neglects the child as soon as its baby antics cease to be amusing, it is only to be expected that the adolescent boy or girl will find the home dull and slow, and will search out undesirable companions.

6. The maintenance of correct living habits and of good physical health is essential to mental equilibrium. Many of the behavior defects of adolescence have physical defects at their foundation. Incorrectly fed children will steal food-related articles; undernourished children are behavior problems in school and frequent truants; defects in vision and hearing are natural causes for behavior that is atypical and seems abnormal. These things are matters of common observation.

The second aspect of the mental hygiene of adolescence is the effort during the adolescent period by correct handling and environment, to prevent difficulties in later life. The hygiene of this period can be understood only upon the basis of a thorough comprehension of the psychology of the period. This discussion will concern itself largely with that psychology; when that is understood, there remains but little more to be said.

We seem to be much concerned and even alarmed at the way the youth of today is behaving. The freedom of the girls, their dress and their speech; the intimate association of the sexes; the dancing and petting; the foolhardy escapades verging often on the immoral or the criminal; their unwillingness to follow our own ideas—ah! There we have it! That is what disconcerts us so much. The young people are not doing what *we* think they ought to do.

Yet, this is not a new state of affairs. It is as old as civilized progress. It is a state of affairs that is absent only in a stationary, non-developing society, such as the savage state.

The adolescent period is that in which the mental and physical powers are becoming equivalent to those of the adult. The individual is suddenly possessed of vast and wonderful new abilities; immense fields of possibility open before him. He is powerfully impelled to go ahead and do something. But, he lacks adequate experience and knowledge upon which to base *safe* behavior. The possibilities of error and disaster are far in excess of the chances of doing the safe and successful thing. Unguided, unrestricted youth is in danger; that stands to reason.

Among primitive peoples, in the absence of written records and formal reasoning, education and guidance takes the form of a system of taboos, traditions, and customs. Such things as the keeping of girls in a dark hut from puberty till marriage; young men having to win a nose-ring by hunting prowess before being eligible to marriage; the buying and selling of brides by parents; the preparation of the bride by the old women of the tribe, all seem to us silly and unreasonable. But these things were developed by ages of evolution and survival; they are not arbitrary inventions, but adjustments of natural processes for the stability of the society in which they operate. They are behavior systems, instinctive and practical, safe and stable, in lieu of the conscious ones that we have developed through reasoning and science. It would make an interesting study to try and determine how much of our present habits and customs are folk-traditions of the taboo type, and how much are really logical. However, our criticism of youth and our alarm at its antics is but a survival of the old instinctive effort to impose the taboo.

The taboo method is not necessary in the civilized state. For the guidance of youth we now have the institution that we call "education", i. e., the accumulated knowledge and experience of past ages, analyzed and systematized. It is more efficient than Nature's crude method, just as scientific methods of growing fruit or raising cattle are more efficient than Nature's. And youth responds will to genuine education.

It is only nagging, repression, and unreasonable criticism—taboo imposition—that is resented by youth. This method of handling adolescent individuals in a civilized state of existence always produces trouble. Sometimes the trouble is mild, because it occurs in an individual who is able eventually to overcome it. But, there are all gradations of abnormality produced, from mere crabbiness to serious failures of adaptation that interfere with the social relations of the individual. Taboo-nurtured individuals are not adapted for good and effective citizenship in a civilized state of society.

The following are a few of the types of abnormality that result thus. All of them are to be blamed on the fact that we still retain our instinctive desire to guide our young people; we have lost that unconscious inheritance of taboo systems and folk-traditions which stabilized the savage society; and relatively few of us have acquired the empirical *knowledge* that is necessary to replace them.

1. The "inferiority complex". The uncompensated type is readily recognizable. The compensated types may be puzzling; to cover up the consciousness of inferiority the individual assumes a blustering, superior air, or becomes sly and deceitful. The causes of this mental state are:

a. The maintenance of too long and too complete a dependance of the child upon the parents;

b. Thoughtless criticism; repressive correction of faults; unreasonable punishment, all of these during early childhood.

c. Abrupt realization of the loss of childhood love and protection from the parents.

2. The "hard-boiled" type, which assumes a swaggering callousness to all finer feelings as a compensation for the lack of demonstrations of affection from the parents. A boy wants love from his mother. If he does not get it, he assumes the mental attitude that he is a hard guy and does not need it. And he does things to keep himself in that mood.

3. The excessively timid type, which is readily recognizable, and which is certainly out of place in our bustling, competitive society, is produced by excessively strict discipline, unreasonable punishment of criticism, and excessive threatening.

4. The intemperate or excessive type: A boy may be a spendthrift or a wild profligate, either because he saw his father do these things, or because he was kept too close and not allowed any liberty at all during childhood. The girl who does things just to be wicked is often merely compensating for an excessively puritanical childhood. Youth is naturally experimental; previous training has to set limits and prevent disaster. These reactions to excessive restraint frequently destroy the individual's judgment as to the limits to which experiment may proceed. Experimental tendencies, with inhibitions weakened by one or the other of the causes mentioned, account for much of the "petting", sex misconduct. cigarette smoking, joy-riding in other people's cars, etc.

5. Gangsters and their perpetrations are the very natural outcome of a number of well-known factors. Youth loves thrill and adventure. The drabness and monotony of the tenement districts of modern industrial cities are so stifling that it is only natural that reactions should arise. The gang not only satisfied the herd instinct, but provides means for relieving monotony and satisfying hunger for adventure.

6. The psychopathic types, popularly classified as "insanity" are nothing more than severe cases of the same disturbances that have already been outlined. The difference is mainly in the degree or intensity of the disorder; when this becomes such that the individual is not longer able to maintain his position in the social order at all, but becomes a dependent of society, he is popularly and legally called "insane". Criminals are largely classifiable by the same methods and in analogous categories.

For example: There is the guilty, self-deprecatory, or self-criticizing type, who do illogical things or commit crimes because of the desire to be punished; the type with delusions of persecution who believe that someone is injuring them and commit indiscretions or crimes with the idea of defense or retaliation; the paranoid types, in whom a fixed delusional idea dominates the entire conscious life, etc.

All of the wild, apparently immoral, apparently criminal acts of youth have a logical explanation. If we knew in each case the experiences that led us to, say, the stealing of a car, or a riot in a dance hall, we could not help admitting that it all followed naturally from good causes; if things had happened and looked that way to us, we should have done exactly the same thing. Whatever the individual is, either a well-balanced citizen, a useless misfit, or a dangerous criminal, is, in the general run of cases and with but few exceptions, a direct result of the things that have happened to him and how he has been handled by people and by fate since he was born.

From the wild escapades and sex misdeeds on the one hand to holdups and murders on the other; from the nervous, crabby, eccentric individual to the psychopath so badly out of adjustment with the world that he must live in an institution, all these conditions develop slowly, logically, naturally, as direct results of definite causes in the lives of the individuals concerned. They are largely preventable. With correct handling of the individual from birth, ninety-nine per cent of these abnormalities would not occur.

What then, can we do to prevent their occurrence? The answer to that constitutes mental hygiene. Thus far, mental hygiene is more of an art than a science; it is not easily put into words. Suggestions may be made, but rules are difficult to formulate. Much of the advice consists of "don'ts".

1. Do not try to impose your *feelings* and *emotions* on the young people whom you are guiding. Youth accepts genuine knowledge, but will not accept opinions. Confine your teaching to knowledge and facts.

2. Healthy, normal young people cannot be forced. They can be trusted to act correctly upon the basis of the right kind of knowledge; but as soon as you succeed in compelling them, you have rendered them to that degree abnormal psychologically.

Youth sees more clearly than we do. Its reasoning powers are fully as good as ours, and their operation is not cluttered up by a lot of ancient prejudice and tradition. Youth will act safely on the basis of correct knowledge. But, I warn you that its action on the basis of this knowledge may not be the same as yours would be.

Why should we expect youth to obey blindly and arbitrarily, or accept ideas bodily from us? Why should our opinions be better than theirs?—unless backed up by actual knowledge or fact? Often our opinion is not as good as theirs, and they can see it clearly where we cannot.

The young people of today cannot be expected to live and act as we did; and they resent our thoughtless effort to make them do so. If you do not want your boy to dance and cannot give him reasons that will satisfy his keen and active mind, do not be surprised if he loses faith in you.

3. Sex instruction is but a special case under the matter of teaching facts, not opinions. It must begin early in childhood, when the first questions are asked, which is around 5 or 6 years of age.

At no time can the child grasp the entire problem. At any given age, the instruction must be confined to that portion which the child is capable of grasping; which amounts to satisfying his curiosity in the matter. The education thus proceeds continuously, a step at a time, on through adolescence. It cannot be handed over bodily at any one time; if attempted too early, the child will not understand and psychic damage may be done; if deferred too long, the instruction may arrive too late.

4. It is necessary that parents be perfectly honest with children. This is not easy, because to accomplish it, one must first be honest with oneself. Not all of us are; it takes too much time and effort. Parents caught in deceit by their children lose the latter's respect permanently. If you are caught in a mistake, admit is squarely. If you object to your daughter's keeping company with a certain young man, admit honestly that it is because you are mentally too indolent to realize that she has grown up, or that the young man's father got the best of you in a business deal. The adolescent mind can distinguish more clearly than ours what is just and fair; things look simpler and easier to them than to our cluttered and hampered minds.

5. Boys and girls need the understanding of their elders. This takes the parents' time. Listen to them when they feel like talking to you. Watch them at their activities. Put yourself in their places, and see how the world looks to them. If you can do that, their future is fairly safe.

6. Be friendly to them. If you act distant and superior, you will never get their confidence. If you are one of them, they will tell you their secrets and bring to you all they hear and see, and ask your advice in their difficulties. What better method could there be for the control and guidance of the adolescent mind?

7. Give them your affection and support, but do not expect them to depend utterly on you for every thought and every breath. They have a right to live their own lives. But, affection, along with respect and confidence, will exert more influence than any amount of compulsion. Youth can be led, but not co-erced.

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Psychopathic Behavior, Wm. C. Comstock, Richard G. Badger, $5.00. Practical Measurement of Psychopathic Behavior; Study of a System of Delusions; The Question of the Subconscious; The Illusion of Levitation; Hypnagogic Hallucinations; Clinical Study of a Dream Personality.

Contributions to Psychoanalysis, S. Ferenczi, Badger, $4.00.

Psychopathology of Hysteria, Chas. D. Fox, Badger, $2.50.

Child Behavior, Florence Mateer, Badger, $2.50.

Philosophy of Conduct, Samuel A. Martin, Badger, $1.50. Ethics and Personal Behavior.

Subconscious Phenomena, Prince et al, Badger, $1.50.

Psychotherapeutics, Prince et al, Badger, $1.50.

Source and Aim of Human Progress, Sidis, Badger, $1.50.

The Higher Usefulness of Science, Wm. E. Ritter, Badger, $1.50. The author emphasizes the necessity of interpreting living beings in the light of their ordinary conduct under natural conditions, rather than according to their abnormal conduct under special conditions imposed in a laboratory, or according to particular doctrines of their ultimate nature.

An Organismal Theory of Consciousness, Wm. E. Ritter, Badger, $1.50. A hypothesis of the animal's conscious life which does away with the theory of a Body and Mind so distinct from each other as to have made the theory for many decades a philosophical scandal.

The Causation and Treatment of Psychopathic Diseases, Sidis, Badger, $3.00.

Think to Myself Chapters, Esther Starr, Badger, $1.00. Auto-suggestion translated into everyday language.

Nervous & Mental Monographs, Nervous & Mental Disease Publ. Co., 3617 Tenth St., N. W., Washington, D. C.:

Outlines of Psychiatry, Wm. A. White, 1, $4.00.

Selected Papers on Hysteria and Other Psychoneuroses, 4, Freud, $3.00.

Three Contributions to the Sexual Theory, Freud, 7, $2.00.

Cerebellar Functions, Andre-Thomas, 12, $3.00.

Poliomyelitis, Wickmann, 16, $3.00.

Vagatonia, Eppinger & Hess, 20, $1.00.

The Dream Problem, Maeder, 22, $1.00.

The Significance of Psychoanalysis for the Mental Sciences, Rank & Sachs, 23, $2.00.

Study of Organ Inferiority and Its Psychical Compensation, Adler, 24, $2.00.

Technique of Psychoanalysis, Jelliffex, 26, $2.50.

Foundations of Psychiatry, White, 32, $3.00.

NEW DIAGNOSTIC AID IN SUSPECTED EXTRA-PERITONEAL BLADDER RUPTURE

V. R. Stephens and W. J. Vynalek, Beryn, Ill. (*Journal A. M. A.*, June 1, 1929), believe that palpation of the supropubic and perineal regions as well as digital rectal examinations should be done as a routine following the air distended bladder method of roentgenologic examination in cases of suspected bladder rupture in which the diagnosis is still in doubt. Lateral plates of adequate clarity are often difficult to take, and in small extraperitoneal ruptures it may take some time for the air to escape from the bladder. Palpation may then reveal crepitation and make possible an absolute diagnosis as in the case cited.

THE IMPORTANCE OF MENTAL HYGIENE IN CHILD CARE

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Until not long ago the average physician's practice consisted mostly in treating disease. Today, most medical men, whether in general work or limiting their practice to children, find that a good deal of the office work consists of taking care of the healthy child, directing his progress of growth and development during the most delicate period of man's age. So far as the physical development of the child is concerned, much has been done to promote his welfare, and the physician has kept steady pace with advanced ideas resulting from authoritative studies in metabolism, immunity, etc.

When it comes to the question of mental hygiene among children, the physician is far less enthusiastic than he is in the realm of physical development. Whether, because of lack of appreciation of the problem or whether because of general indifference to psychiatric progress, the fact is that very few physicians realize that parents nowadays are looking to the doctor for more than mere treatment of tonsils, diarrhoeas or heart disease; where the child is concerned none but the best advice is expected for the child as an organism rather than merely as a single or group of organs that may be out of gear. The present conception of proper child care is that which deals with the child as a growing human being with mental as well as physical, psychological as well as physiological capacities and potentialities.

It is true that while the knowledge of the physical development of the child is more or less systematized in the eyes of the physician, mental hygiene is looked upon as a rather mysterious art enshrouded in high sounding terms which are frequently subject to unjustified criticism bordering on ridicule. Then, too, the impetus that the mental hygiene movement has gained of late as a result of studies in the field of criminology has relegated this phase of child care to the psychiatrist, who, being too occupied with actual pathology of the mind, is slowly but surely assigning the task to the psychologist and the so-called mental hygienist.

Fortunately for the child this group has worked very diligently in the past few years with the result that today there are very few progressive communities who cannot boast of a child guidance clinic, where the thousands of young individuals who for one reason or another have failed to adapt themselves properly to their environmen may be studied and given a hand to lead them in the right direction. Similarly, almost out of a clear sky there has sprung up a vast literature on child management, child behavior, child psychology, etc., etc., all dealing with the mental development of the child. It is interesting to note that practically all these books are written for the laity. Many have gone through several editions, and judging from the inside covers of the library volumes, every one of these books has had a wide circulation. Thus the public is aware of the beneficial results obtained by a systematized regime of mental hygiene. The physician, however, is still under the delusion that proper child guidance from the standpoint of mental development belongs to the school or to the parents. He does not realize that mental care is as important as physical supervision, and that both the school and the parents expect this advice to come from the physician who should be properly equipped to help the child in his preparation for the competition which he will be called upon to meet when he reaches the adult stage.

There is another factor which conduces to the physician's indifference to mental development of the child. The old belief in hereditary attributes has probably done more harm than anything else in keeping the physician from issuing advice on mental guidance for the child. Thus, if the child's father is shiftless it was expected that the child would be doomed to the same fate. If the child's grandfather had tuberculosis, the child was expected, sooner or later, to fall prey to the same disease. Fortunately, for all concerned, our views on the heredity of tuberculosis have been modified in the past few decades and means of preventing the spread of tuberculosis are known to every qualified physician. Our views on heredity and its influence on the mental makeup have also undergone a radical change and even the most conservative workers in this field now agree that the personality of the child is the sum total of heredity and environment. The latter factor is a very important feature in shaping the mental attitude of the child, even more so than in the influence it exerts on the adult. It is in this realm that the physician's advice is urgently needed. With proper understanding and broadmindedness so generously attributed to our profession we can do incalculable good by exerting our influence in the home, school, and the community at large.

Those who are acquainted with the complexity of the child guidance institutions are prone to assume that unless one is equipped with all the facilities which the clinic possesses, one cannot tackle the problem of proper instructions in mental hygiene. Similarly, the average physician labors under the notion that the shaping of the child's emotional and intellectual growth, if it is a problem, it belongs to the psychiatrist.

It is admitted that serious behavior problems occasionally require psychiatric study which properly belongs to the specialist. But is it not true that rickets is strictly an orthopedic problem when it has gone to the stage where bone deformity is such that it requires technical appliances which only the orthopedist is equipped to handle?

Mental hygiene is that phase of preventive medicine which deals with the intellectual and emotional process in preparing the child for a correct adaptation to the group with which he is to come in contact. Man is a social being and every where he moves he is required to make adjustments in his relations to others. Childhood is known to be the period when habits are formed. Whether habits pertain to the physical, mental, or the emotional side of life makes little difference. A child may be taught to develop the habit of regularity in eating, sleeping, regular bowel evecuation. Similarly the child may be taught to meet mental and emotional stresses early, so that just as the individual may be spared from the inconvenience of the cathartic habit he may likewise be spared from joining that enormous group of nervous children, backwardness in school, and as our knowledge of delinquency increases, from the truant officer with its subsequent complications; or as is more frequently the case, the nervous breakdown, psychoneurosis, psychothenia of adult years. And the duty rests on the medical profession rather than on the school. It is true that the training of the child belongs properly to the parents, and far be it from me to suggest that the physician's office is the place for the child to regulate his mental or emotional life. Yet, neither is the doctor's office the place for the baby to nurse or take his bottle. The parents have accepted the idea of supervision of the child's physical well being. Most mothers nowadays realize that regular visits to the doctors office are well worth the trouble. Infant mortality and morbidity have been materially reduced as a result of this practice and both physician and layman appreciate this situation.

The mental and emotional morbidity in childhood is enormous. There is not a school in the country which does not have its quota of laggards, dullards, backward children, or by whatever other pet name these unfortunate young human beings may be designated. They can not carry on their school work effeciently, repeating the grade year in year out. To the teacher they are the "ornery kids" who appear "too lazy" for anything, except being a nuisance. They use up the teacher's energy and the public's funds, all to no avail. They may be day dreamers indifferent to whatever goes on around them. There are those whose cowardice brings on a fight at the slightest provocation from his fellows, only to run when the opponent shows an inclination to "call the bluff." Defeat marks not only the reaction which this type of child manifests, but indeed, every action which he takes the trouble to initiate. He learns to take defeat naturally early in life, at first perhaps with a sad smile, later with a sigh of indifference. His doom to failure takes him from bad to worse—from truancy to the juvenile court, from there to the higher institutions created by society to check his activities. This, the criminologist tells us, is the usual record of the greatest percentage of our inmates of penal institutions the world over. Thus the emotional and mental morbidity of of childhood is the true precursor of the more serious social conflicts in adulthood.

One must bear in mind that the course of mental and emotional struggles in childhood usually do not run in these channels alone. By far and the most usual sequellae one finds this maladjustment later in life in very protean manifestations. These latter manifestations are usally studied by the neurologist, the psychiatrist, who as a rule follow the internist and the surgeon. It is from the psychiatrist that we learn where the physician who supervised the early training of the patient's life has failed miserably in his task. The nervous breakdown, the psychoneurosis, psychasthenia and the rest of the functional disturbances which make life a burden to the thousands of otherwise well individuals is then traced to the lack of mental hygiene in infancy and childhood. The sequallae of rickets are as a drop of water in the ocean compared with the devastating influences that follow in the wake of neglected training of the mental and emotional side of the child.

To depend upon the psychiatrist to detect these difficulties early in the child's career would be as impractical as to rely on the orthopedist for the prevention of rickets. Indeed, the orthopedic surgeon sees the cases of rickets, because of physical deformity, earlier in their disease than does the psychiatrist see the "nervous wrecks." The most the physician can expect from the psychiatrist is information on how to deal with the problem early in order to avoid later difficulties. The psychiatrist is in a favorable position to study these severer manifestations and suggest ways and means for their prevention. Child psychology is an important branch of medicine which is totally disregarded by the average practicing physician.

It is a well known fact that by the time the child enters school his habit pattern is already formed. The most important period of child training is the first five or six years of his life. It is at this period that the physiological mechanism is at its greatest flow. Metabolic processes are steady and growth is rapid. This rapidity of growth is not by any means limited to the physical make-up of the child but extends to his mental and emotional life as well. It is, therefore, of utmost importance that this principle be considered seriously and a proper regime of mental hygiene be instituted in the same manner as the physical phase of the child growth is supervised.

How, then, can the physician help in this worthy movement? It should be emphasized for those who look upon this movement as a fad based upon some high sounding theory, that, though the problem has been brought to the front only within the past decade or so, the public is fully aware of its benefits. But like all other matters of medical education as applied to the laity, there is here, too, the embarrassing situation that little knowledge is worth less than no knowledge at all. Also, it should be remembered that the physician should be the one to whom the parents can turn for advice on child health, be it physical or mental. Instructions on mental hygiene should be issued at the same time, at the same place, and with as much interest as is the instruction for physical hygiene. This instruction should begin with the first visit and continue systematically at every subsequent visit to the physician's office. The physician should always bear in mind proper discipline and proper habits in the infant and child are just as important as proper weight and proper nutrition in the same patient.

The prerequisites to a regime of mental hygiene are: (1) a good home, (2) parental love, (3) discipline. (1) The Home: A good home is not necessarily limited to a rich home. In fact one finds as many good homes in the families of moderate or even poorer circumstances as one frequently finds among the well to do. Here the home is considered good, from the standpoint of the child, where the young individual can learn the game of life from his associates, by precept and example. Children are great imitators. The home is the first educational institution for the child, and as a rule he finds it simple, to do what he sees the parents *do,* than what the parents *tell* him to do. Here he learns consideration, toward his parents, brothers, sisters, neighbors, servants, and others with whom he comes in contact. Here the old saying "like father, like son" holds true more than in later years not so much because of heredity, but rather because of the imitating capacity of the young son.

It is naturally inconceivable that the physician be required to regulate the moral or social status of the home. Yet the physician of the previous generation, so I am told, had a great reputation for being the family advisor in matters of domestic adjustments. With the amount of tact that our profession demands today, may we not throw in a little personal advice in an impersonal way? Consider the child.

(2) Parental Love. It is a known fact that children do not get along well in the hospital. They need their mother. The "motherless child" is a proverbial object of pity because he has been deprived of the greatest asset in the world, practically as well as sentimentally, mother love. The sense of security and comfort that a child feels in the presence of his mother is such that it can never be supplanted by any one else. The tendency to leave the infant in the entire care of a nurse, or the older child in the care of a governess is to be condemned. This does not mean, however, that the mother should become the slave of the child. A proper regime should be outlined whereby the care of the child will allow the mother as much time to herself as is compatible with her social needs and the child's comfort. It is essential that the child should realize early in life that he is part of a group and that he has to be considerate of others in the family. He should be made to undestand that others, too, like himself are entitled to comfort. The spoiled child, it is therefore evident, is the most frequent victim of lack of mental hygiene.

The father's role in this system of training is also of utmost importance. He should understand that his duties toward his children do not end when he provides food and shelter to his family, but that he is to serve as a model to his offspring. His actions and reactions are duplicated by the child. The tired business or professional man finds himself infinitely happier in his mood if he learns to enjoy the friendship of his children, notwithstanding the innumerable, and at times embarrassing questions he may be called upon to answer.

It is in their early years that children become attached to their parents and home. A child whose love for his home and his parents is based on pleasant memories of the preschool years, makes a much better sepcimen later in life than one whose so-called devotion is merely an expression of his duties toward his parents in return for the material things for which he is expected to be grateful.

(3) Discipline. As stated above, the child, early in life, should be taught consideration for others. Every physician has seen young children who tyranize the family. An infant can be trained from the time he is born that there is a definite time when he is to get attention. His activities should be regulated so that he should become accustomed to form correct habits early in his career. Feeding, bathing, play, should be carried out at definite hours of the day in order to give the mother the allotted time required to her activities. An infant can be trained to bladder and bowel evacuation in such a way as to minimize washing of the diapers, and what is even more important, this habit will prevent later difficulties so frequently associated with irregularity of elimination.

Proper habits, it is well known are the greatest asset to a person's activities. "Habits," some one has said "are the tools by which we carry on in our daily lives." A child should be encouraged to form proper habits during his formative period, the period of greatest plasticity, the age up to about six years. These habits should pertain not only to his physical needs such as regularity in feeding, sleeping, elimination, etc. but habits also which would help the child in meeting mental and especially emotional problems. The shut-in personality, the habitual breath-holder, and the child with other habits that are considered unconventional should receive attention early. No physician has a moral right to pass up the young child with a wave of the hand "he'll outgrow it." True enough he will outgrow this undesirable habit, but who knows what other undesirable activity will take its place? Undesirable emotional habits should be studied as carefully as undesirable physical features in the child if one is to prevent later difficulties.

In conclusion it may be said that in the United States there are 50,000 new admissions, annually, to the various psychopathic hospitals! This number is not decreasing, but because of the general complexity of our social and economic systems, is on the increase. However, great hopes can be entertained as a result of the Mental Hygiene movement, which after all is in its early stages. The trend to prevention of mental and emotional difficulties early in childhood, offers if not a solution, at least an amelioration of the serious consequences attending their neglect.

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NUTRITION AS A FACTOR IN CHILD HYGIENE*

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"The ideal to which we should strive is that there shall be no child in America that has not been born under proper conditions, that does not live in hygienic surroundings, that ever suffers from undernutrition, that does not have prompt and efficient medical attention and inspection, that does not receive primary instruction in the elements of hygiene and good health; that there shall be no child that has not the complete birthright of a sound mind in a sound body and the encouragement to express in fullest measure the spirit within, which is the final endowment of every human being". These are the words coming from our President, Herbert Hoover, and it is the same sentiment that has prompted Olive G. Owen to pen the following plea for the child:

"Protect me—ye of larger growth
Hear my appeal: Please take my hand
And lead me safely through the days
Of Childhood into Grown-up Land."

Nutrition has come to be looked upon in the last few years as a very important factor in the life of the individual. The spirited public-health worker realizes the importance of diet for maintaining health, and the progressive physician is now effectively employing diet as a therapeutic measure.

In a great nation like ours it is very desirable for its citizens to use all the known means of science to keep physically fit. It may be surprising to many of us to realize the extent of ill health in our own country. The report of 1918 of the Department of Labor, Children's Bureau, Washington, D. C., presents figures that should awaken even the most indifferent citizen. There were in 1918 approximately twenty-two million school children. At least 1 per cent, or 200,000, were handicapped by organic heart disease. At least 5 per cent, or one million, were on the verge of having tuberculosis. At least 25 per cent, or five million, had defective vision. From 15 to 25 per cent, or three million, had diseased tonsils and other glandular troubles. From 10 to 20 per cent, or eleven to sixteen million, had defective teeth. At least 20 per cent, or four million, were suffering from malnutrition.

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*Delivered at the annual meeting of the Nebraska State Public Health Association held at Lincoln, Nov. 4, 1929.

Undernourishment and malnutrition have been found to be prevalent among the children of the well-to-do as well as of the poor. To remedy this condition requires individual diagnosis of the cause in each instance, and success often depends upon the cooperation of the parent, the teacher, the physician and the child.

Over a billion dollars is spent each year by our nation for the education of the pupils in the schools, but only twelve to fifteen million dollars is expended for school health work. Only sixty-five cents per child per year is spent on health, that is less than 1.5 per cent of the total school fund. No wonder that 15 to 20 per cent of non-promotion, retardation in studies and elimination of children from school is the result of ill health and the neglect of remediable defects. No wonder that approximately two hundred thousand children die each year, 130,000 of these coming from the public schools.

The physical imperfections in the children of our land reflect the physical condition of our adult population. Our first national health inventory came through the World war, when about five million men between twenty-one and thirty-one years of age were examined as to their physical fitness for military duty. The report of the War Department proved most convincingly that a large per cent—about 30 per cent—of our young men could not serve their country by reason of physical unfitness.

Some authorities claim that out of the present population of 110,000,000, only 19,500,000 are in full vigor, 37,500,000 are in fair health, while 45,000,000, or about one-half of the population, are more or less physically imperfect. All the time in the United States there are three million people seriously ill, and every year we have about one and one-half million deaths, by far the greatest number of which are needless and premature. For every death there is an average sickness of two years, or for each death per year there are two persons sick throughout the year.

In the past several decades there has been a steady gain in vitality in the younger age groups. This gain, unfortunately, has served to mask a loss in vitality at the older age periods. This latter phenomenon, a rising mortality in elderly life, is not exhibited in the mortality statistics of European countries. It is almost exclusively peculiar to the United States. The cause of the increase in morbidity and mortality in the later decades of life is due to the increase in the so-called wear-and-tear diseases, the degenerative diseases, the harvest reaped from unhygienic habit disorders. About half a million people die each year from degenerative diseases, heart disease, arteriosclerosis, hypertension, cerebral hemorrhage, diseases of the kidney, diabetes and diseases of the liver. The only group of diseases which can compare with this frightful loss is the respiratory group, which includes pulmonary tuberculosis, pneumonia, influenza and bronchitis. About 65,000 people die annually in this country as a result of degenerative diseases before they reach the age of fifty, and about 30,000 before they reach forty.

Health, our greatest national resource, we squander recklessly. The American people are indifferent to personal and community health problems. They have not yet taken up the conservation of health and the prevention of disease with the same enthusiasm and wholeheartedness with which they carry on their industrial and commercial enterprises. It is strange but true that year by year the human being tends towards omnipotence over the forces of nature, remaining an irrational primitive only in the lack of command over himself. During the World war, a period that consumed less than five years, over seven million persons were killed. Those of us who read this figure with grief and sorrow in our hearts fail to realize that the horrors of peace exceed those of war. Not less than seventeen million lives throughout the world are lost each year as a result of preventable disease.

The general lack of good health, which we have briefly touched upon, is revealed moreover, in a highly successful and prosperous country like ours possessing an enviable climate, and in spite of the great advances we have made in hygiene and sanitation. Wherein lies the cause of this widespread physical deterioration?

Among the factors figuring prominently in the causation of degenerative diseases are: (1) the habitual use of drugs (alcohol, tobacco, patent medicines, laxatives, headache powders); (2) venereal diseases; (3) deficient elimination; (4) a negative mental attitude — chronic fear, worry, mental unrest, anxiety, inferiority complexes, fits of temper; (5) minor chronic infections, which are usually neglected; (6) remoteness from nature—lack of sunshine, lack of fresh air, indoor life and lack of exercise; (7) strenuous living—with its many hours of fatiguing concentration and too few hours for relaxation, and (8) nutritional errors.

McCollum, of the Johns Hopkins University, has spent many years as an investigator in the field of nutrition. As a result of intensive research this brilliant man has enriched his chosen field with many fundamental facts and underlying principles. He has been, indeed, very instrumental in raising nutrition to the dignity of a science. His work does not end with the laboratory. He has gone one step farther. Through his books, his public lectures, his students, his contacts with groups organized for social, civic or hygienic improvement, he has finally succeeded in democratizing and socializing this knowledge of nutrition. Listen to him for a moment for the explanation of the present state of lack of physical well-being in our country:

> If one examines the writings of those of to-day, who are most active in studying the health problem of children and in arousing the nation to activity in their behalf, one finds various causes assigned for existing conditions. All would agree that we must attribute our physical deterioration to subjection of the human race to new and unfavorable conditions, but differences of opinion exist as to the nature and relative importance of these. The sedentary life within houses instead of out-of-doors, the wearing of clothing instead of exposing the skin to the weather with its changing conditions, the eating of soft, cooked food instead of raw, coarse food, the debilitating effects of certain climates, the preservation of weaklings through improved hygiene and care, the artificial feeding of infants instead of nursing, the burden of responsibilities of civilized life, both mental and moral, and the failure to care for the hygiene of the mouth are among the causes most important. Doubtless each of these plays its part in contributing to place civilized man in many parts of the world in his present unenviable position with respect to health. It can now, however, be asserted with assurance that the chief factor responsible for human deterioration in recent times is not included in the above list. THE CHIEF FACTOR LIES IN THE UNWISE CHOICE OF FOOD.

We have spent a good deal of money and effort in the breeding of stock. We should pay much more attention to the raising of the human being. For failure to do so Rose Trumbell rightly rebukes us in her powerful poem:

THE BREED OF MEN

You talk of your breed of cattle
And plan for a higher strain,
You double the food of the pasture,
You heap up the measure of grain;
You draw on the wits of the nation
To better the barn and the pen,
But what are you doing, my brother,
To better the breed of men?

You talk of your roan-colored filly,
Your heifer so shapely and sleek,
No place shall be filled in your stanchions
By stock that's unworthy and weak.
But what of the stock of your household,
Have they wandered beyond your ken
Or what is revealed in the round-up
That brands the daughters of men?

And what of your boy? Have you measured
His need for a growing year?
Does your mark of his sire on his features
Mean less than your brand on a steer?
Thoroughbred — that is your watchword
For stable and pasture and pen,
But what is the word for the homestead?
Answer, you breeder of men!

The great part that improper nutrition plays in the causation of disease is realized more fully when we consider the vast biologic damage faulty food can inflict upon the young as well as upon the adult. Malnutrition leads to greater susceptibility to infection. The frequent cold or sore throat, the infected sinus, the infected tonsil, the middle ear infection, bronchitis or tuberculosis is apt to strike readily the malnourished individual. The death-rate from acute respiratory disease is exceedingly high in children under five years of age, a period when malnutrition occurs frequently and with great disaster.

Malnutrition leads to disturbances in the development of bone and teeth. Poor teeth, soft, chalky teeth, carious teeth, missing teeth and infected gums are indications of improper feeding. Scurvy, rickets and other diseases caused by faulty food destroy very early the integrity and health of dental structures. Mechanical brushing of the teeth is an external method for personal cleanliness and beauty. Hardness or softness of food or mastication have not much to do with keeping teeth in a healthful condition. For sound teeth and gums we need a well-balanced diet.

Malnutrition leads to symptoms referable to the gastro-intestinal tract, such as distress after eating, a feeling of fullness and pressure, abdominal pain, gastric anacidity, hypoacidity or hyperacidity, gastric or duodenal ulcer, diarrhea and constipation. It has been estimated that 50 per cent of the American public is constipated, and that this vast army of constipated bipeds consumes annually laxatives to the amount of fifty million dollars.

Malnutrition leads to stunting in growth, to underweight or to overweight, to moderate or severe anemia, to muscular weakness and general debility, to faulty posture and to fatigue.

Improper diet may bring about injury to the kidney and to the heart muscle.

Malnutrition injures the glands of internal secretion, glands which furnish the biologic urge or drive of the individual. Malnutrition produces marked changes in the nervous system anatomically and physiologically. Malnutrition spares nothing for even the emotional and mental life of the individual may suffer. An ill-fed child is apt to be irritable, melancholy, languid, apathetic, lacking in determination, in ambition and in the power of concentration.

We are beginning a new era in the history of the human race. Our past civilization has been built upon institutions, governments, great industries, great commercial enterprises, great highways, great cities. This type of civilization, the sun of which is now setting, holds as its goal impersonal perfection. The newer type of civilization, the sun of which is now rising, takes as its goal the perfection of the human being, who is, after all, the controlling force that dominates any institution of institutions. This newer aspect of civilization really leads us into humanization. It has developed for us the social sciences, sociology, economics and psychology, preventive medicine and hygiene. It has crystallized for us the ideal of social service. This newer aspect of civilization heeds the prophetic voice of the coming age and aims to correct the errors of the past.

It was Edwin Markham who was one of the first to see clearly the trends of the new spirit In his poetic way he protests against the older order of things and makes demands for the new:

We are all blind until we see
That, in the human plan
Nothing is worth the making, if
It does not make the man;
Why build these cities glorious
If man unbuilded goes?
In vain we build the world
Unless the builder also grows.

Year by year we begin to realize more and more fully that the strength of humanity lies in the individual and that the chain cannot be made stronger than its weakest link. We begin to comprehend more deeply the importance of the fact that the unit of society is the individual and that whatever brings out the best in him is a gain for society as a whole. Our educational ideals have changed to harmonize with this concept of social philosophy. The aim of education is not, as some would have us believe, to develop an individual capable of gaining a livelihood. Its aim is much higher. Its supreme goal is the development of the individual in all his potentialities, physical, mental and spiritual. In short, modern education holds out as its product the man or woman with an all-rounded personality, armed with health and vision and knowledge, prepared to carry on in a world full of complexities, competition and rivalries.

Happiness is an inward adjustment, but it depends to a large degree upon external factors. Among these factors we may mention health. Loss of health is the greatest obstacle to happiness and activity. It mars the personality. It cramps its possibilities. It limits its usefulness.

Health is not a gift given freely. A positive mental attitude is required to hold this priceless treasure. A knowledge of the simple laws of hygiene and sanitary living is indispensable. A conversion of this knowledge into correct lifelasting hygienic habits is absolutely necessary. As Huxley has stated, the aim of education is not knowledge but action.

Man, as he reaches maturity, unfortunately loses the flexibility of youth. He becomes an unyielding bundle of habits not subject to great correction or change. To attempt to modify habits of life in the average adult man or woman is almost a useless task and a thankless job. On the other hand, youth is plastic, receptive, acquisitive. The boys and girls in the care of the parents and the teacher are rough stones direct from the quarry, ready to be fashioned into beautiful living monuments.

Among other things, the parent and the teacher can lay the foundation for a sound mind in a beautiful, healthy body. They can reveal an interest, keen and enthusiastic, in personal hygiene. They can build in through the dispensation of knowledge and through their own daily practices the habits that lead to a healthful life, and they can destroy that cankering sore, malnutrition, which undermines the health of the boy and girl and which may prove to be the basis of much of the disease processes that rob them in later days of the good things of life, nay even life itself!

We, in this great country of ours, are apt to lay great stress on some things and underemphasize others. We brag about our material prosperity and about the twenty-five million automobiles we own. You remember the story of the famous Roman lady, who boasted to her guest of her priceless jewels. When requested to show them, she immediately brought forth her two lovely children and proudly proclaimed that these were her priceless jewels. With the same pride as that shown by Cornelia, we should point to the immense wealth and treasure represented by our thirty-five million children. In the words of Phillips Brooks, "The future of the race marches forward on the feet of little children".

> To the parent and to the teacher, each and every one of these millions of children speaks and says in his own way:
>
> I am the captain of industry of the next generation, the creator of things ugly or beautiful, the saint or the criminal, the man or woman of action and energy, or the man or woman of sloth and indolence.
>
> I hold in my hand the future of civilization. I can destroy the sweet fruits of the labors of the past, or I can plant the seed of even greater happiness than now exists.
>
> In short, what I am today or what I shall be tomorrow, much depends on you.
>
> I am the question to which you make reply.

We are living in an interesting period of transition. Life is becoming more intricate and more complex, while at the same time the hours of leisure are increasing, and the joys of life, physical, mental and spiritual, are multiplying rapidly. The school, reflecting as it should the life of the times, has also increased its activities in many directions. It has enlarged its scope, and it has even been forced to invade the field of that teaching formerly the province of the home.

In order that the child may successfully cope in later life with the ever increasing demands upon its vitality which modern living necessitates, we have begun to incorporate into the curriculum the art and science of healthful living.

We have made much progress in preventive medicine. We have conquered or are about to conquer many infectious diseases, like smallpox, diphtheria, measles and scarlet fever. We have almost slain the monster of infection. But a new monster even more ferocious and destructive has arisen in our midst. This new monster is represented by the degenerative diseases, the diseases due to habit disorders—heart disease, high blood pressure, hardening of the arteries, diseases of the kidney and liver. The result of these habit disorders is appalling and should provide food for thought even to the most indifferent. Each year more than half a million people die prematurely in the midst of their greatest activities and their best efforts. These deaths are all preventable, if we begin in infancy and childhood to impress the plastic mind with the habits of health, which will be followed subconsciously into what now is considered the dangerous and tragic middle age and the dangerous and tragic period known as old age. If we are as highly civilized as we think we are, and as humane, scientific and wealthy as we claim to be, what excuse have we to offer for permitting millions of people to be constantly ill from preventable disease, and the lives of our fellow beings to be sacrificed to ignorance and neglect?

In view of the great price paid for the neglect of health in childhood days, no boy or girl should be subjected during the period of growth and development to undue and to unnecessary biologic strain or deprivation. No child should be allowed to suffer physical or mental retardation through malnutrition. If such condition unfortunately exists it should be removed at once, for viewed from a broad aspect it is often brought about by causes which have sociological and moral import. Improper food habits are by no means the only cause of malnutrition. Among other equally important causes are physiological defects and pathological processes, lack of home control, chronic over-fatigue and improper health habits. These very causes have their roots in the base of the social, hygienic and moral status of the family, in which environment the child is placed by the force of circumstances.

The greatest problem of conservation relates not to forests or to mines, but to national vitality. To conserve the latter we must begin by conserving the child.

WAYS IN WHICH EMOTION CAN EFFECT THE DIGESTIVE TRACT

Some cases are reported by Walter C. Alvarez, Rochester, Minn. (*Journal A. M. A.*, April 13, 1929), in which there were signs of a psychic increase in intestinal tone and activity. Much experimental evidence has been gathered to show that emotions can stimulate or inhibit not only peristalsis but also the flow of the salivary, pancreatic and gastric juices. Normally, the sight, smell and thought of food prepare the digestive tract for the work it has to do. Not only mental but also physical fatigue can interfere with this process. A syndrome is described in which most of the sphincters of the body are hypersensitive and hypertonic. It is suggested that more effort be made to warn patients against eating when absent-minded, mentally upset, or greatly fatigued. Not infrequently some article of food gets the blame for an attack of indigestion when the trouble was really due to the fact that a large meal was put into a stomach that was not ready to receive it. It is suggested that after operations, when a return of peristalsis and intestinal tone is desired, it would be logical to give the patient some tasty morsel of food, preferably meat.

MANAGEMENT OF EMPYEMA (Continued)
INTERCOSTAL OPEN THORACOTOMY

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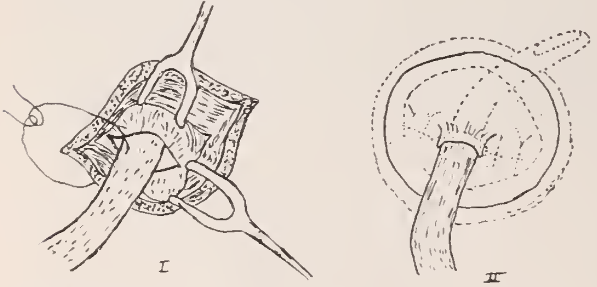
Sixth of a Series of Articles on Thoracic Surgery.

Indications Intercostal open thoracotomy is seldom indicated. As a temporary expedient to relieve pressure and circulatory embarrassment quickly in large massive empyema with the condition of the patient very unfavorable it may be justified. The weight of authority is strongly in favor of rib-resection as a routine for open thoracotomy. However, in the presence of wide intercostal spaces great pressure phenomena and especially if a closed drainage system is not desired this operation may be used.

The site of election is determined by the same consideration as to anatomy and location of pus as influences the selection for aspiration or rib-resection. A site as dependent as possible considering the danger of injuring the diaphragm or of having the apertures of the drainage tube as high as the dome of the diaphragm should be selected. Usually the sixth or seventh intercostal space in the mid-axillary line or the eighth or ninth in the posterior axillary line is chosen. Preference should be given to the posterior site if not otherwise indicated by position of the pus.

Preferably the posterior end of the incision should be no less than 3½ inches from the spine because of the large size of the intercostal artery in this location.

The anaesthetic: Usually local anaesthesia is employed. One per cent novocaine—1 or 2 cc intradermally along the line of incision and about 10 to 15 cc infiltrated into the intercostal muscles and the subaponeurotic fascia and pleura. The incision may be either vertical or horizontal through skin and superficial fat, but must be parallel with the ribs when incising the intercostal muscles. If nearer the upper than the lower border of the rib the larger inferior intercostal is less apt to be cut. The incision should be continued to the pleura. The pleura should then be opened at first by a small perforation which is enlarged to the desired extent by scissors or by spreading with artery clamps.



1. Insertion of the tube into the pleural cavity with suture fixation.
2. Tube in situ, wound closed and air-exclusion flange cemented to the chest wall.

The management of drainage from an intercostal opening may be by several plans:

1. Two tubes may be inserted secured by safety pins and the wound handled as a simple open thoracotomy.
2. A closed system may be established by tight suture of musculature and skin about a single tube which is then connected with a suction apparatus or the tube may be closed off for intermittent aspiration and lavage.
3. A rubber bell may be applied over the thoracotomy and the open drainage tubes and a suction apparatus of the hydraulic or gravity type applied.
4. A flanged (Pollard's) empyema tube may be inserted through the opening and one of the several attachments previously mentioned used in connection with it.

If intercostal drainage is prolonged scar contraction with apposition of the adjacent ribs may occur.

Technic of trans-costal (rib-resection) thoracotomy: Surgeons are not unanimous in the belief that the closed drainage method is preferable or suitable for most cases. Hartwell of New York, in *J. A. M. A.*, 1919, page 642, says: "No form of treatment for empyema which disregards the thorough drainage of the chest cavity by a rib-resection, and the gradual reexpansion of the lung by respiratory effort, meets the requirements. Other means will cure only a certain number of cases, particularly in such times as the disease occurs in abortive forms, which it has done during the past two years."

The objections to closed drainage methods that have been offered by those who cling to the older plan of open thoracotomy are well epitomized by Egger. "Closed methods may be divided into two main groups: (a) intermittent and (b) continuous closed drainage. In each group there are numerous subdivisions based on special appliances or procedures advocated by individual authors. Though these methods have been used for years, they have never been universally adopted as routine operations. The reason for this is that they have failed in certain important respects, the chief of which are inadequate drainage and inability to dispose of large fibrin clots. Cumbersomeness and easy derangement of apparatus are other objections raised to it, but all of them have been and can be successfully met in a case in which the method is really indicated."

Perhaps the chief argument against the general adoption of closed drainage is that it is unnecessary, and that it often delays rather than favors early healing. Some of the closed methods are easily applied; others are more difficult and require special skill. Practically all of them necessitate the use of some special appliance or special treatment to be effective.

The after-treatment needs constant supervision by one familiar with all the details, and who understands and values the importance of an acute pneumothorax. An error in technic may negative all that the treatment was instituted to prevent.

Some of the advocates of closed drainage state that it is of minor importance where the puncture is made, as long as the tube enters the cavity. It is claimed that suction will remove all secretions effectively. Such teaching is misleading, because in the upright position sacculation of pus may occur. Healing will often be delayed because drainage is not free and secondary accumulations of pus are more likely.

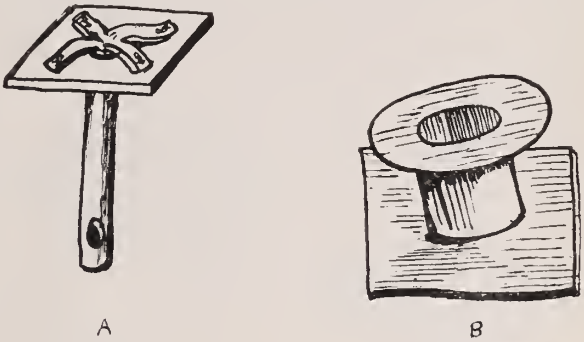
We have observed that a chronic pneumothorax may result in spite of the treatment, and that an already existing pneumothorax is not obliterated by the application of negative pressure.

It appears that with a trocar stab a long puncture results more often than with other methods. One author reports bronchial communication in ten cases in a series of thirty-two. This is much more frequent than ordinarily encountered.

Empyema that occurs late in pneumonia or is discovered after the pneumonia has recovered is treated as well or perhaps better by open thoracotomy.

The site: Some advocates of closed-drainage maintain that it is immaterial what site is selected in that method providing the empyema cavity is entered. It is of greater importance, however, to select the most dependent site for drainage by open thoracotomy. Consideration should be given to the dome of the diaphragm and to the possibility of selecting a site so low as to be subdiaphragmatic.

Many arguments have been brought forward in favor of lateral incisions. Godlee, of London, whose experience as consulting surgeon to the hospital for consumptives, says: "I have no hesitation in recommending a posterior opening both on theoretical grounds and as the result of experience, the best place being, in my opinion, the region of the ninth or tenth rib, not far from the scapular line. I have often had to make a posterior incision when a lateral one has failed to effect a cure, but never to make a lateral one when a posterior one has proved inefficient. An incision in the spot recommended will usually be found to be almost, if not quite, at the lowest part of the cavity, because the diaphragm has become adherent to the chest-walls before the effusion took place; and if it be not at the time actually the lowest part, it soon becomes so owing to the extention of this process. If a lower spot be chosen, the opening usually becomes valvular. The posterior incision ensures the best possible drainage both when the patient is recumbent and when the body is raised, and the theoretical objection that lying on the incision may be a source of much discomfort to the patient is not supported by experience.



A. Flanged tube. B. Pollard's tube.

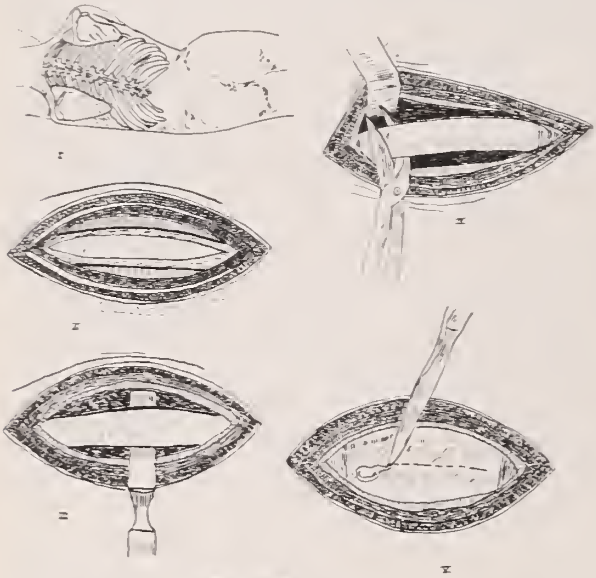
Either of which may be inserted into the thoracotomy opening and connected to various types of constant or intermittent drainage.

The anaesthetic: Ether is contraindicated in all cases where the lung is diseased. The widespread use of ethylene and nitrous oxide in the hands of more expert anaesthetists has made available this form of general anaesthesia, which is not conducive to aggravation of existing lesions.

In patients of very nervous tendencies the employment of one of the general anaesthetics is preferable. However, a properly administered local anaesthesia with one or two per cent novocaine is the ideal anaesthetic. It should be preceded forty-five minutes before the operation by hypodermic administration of Pantapon gr. one-third; Hyocine gr. one hundred and fiftieth and Atropine gr. one hundred and fiftieth.

The position of the patient should not be too much on the affected side as this is dangerous, especially if there be much fluid or if the empyema has ruptured into a bronchus. A high table and moderate turning of the patient to the sound side will permit suitable access to the field of operation.

The common incision follows the axis of the rib, but the vertical one has some distinct advantages. The oblique or transverse one involves a transverse division of the fibres of the latissimus dorsi, and unless great care be taken that the skin be not drawn up by raising the arm, is often found to be lower than the opening in the chest-wall when the operation is completed. Should the oblique incision have been selected, and this accident occur, it must be rectified by converting the incision into a—-shaped one, as it essential that the superficial and deep openings be opposite one another. The vertical incision should be 3½ or 4 inches long, and should be followed by splitting the latissimus in the direction of its fibres for an equal distance and then dividing the serratus posticus inferior across the direction of its fibres. The parts are then held widely apart by long retractors and the periosteum of the rib thus exposed divided for 3 or 4 inches.



I. Thoracotomy—Line of Incision.
II. Thoracotomy—Incision through periostium.
III. Thoracotomy—Stripping periostium from rib.
IV. Thoracotomy—Resection of rib.
V. Thoracotomy—Incision of pleura; pus escaping.

The periosteum is then separated from the rib by a blunt, slightly curved periosteum elevator both on the superficial and deep surfaces, and the rib divided as far forwards and backwards as possible, the retractors being placed first forwards and upwards and then backwards and upwards.

After the removal of the piece of rib any bleeding vessels are secured and, if it be thought advisable, the intercostal artery is divided and ligatured. The nerve should, if possible, be preserved, because, although its preservation sometimes is followed by neuralgic pain owing to the pressure on it by the tube, its division is sure to cause a patch of numbness in the area it supplies.

The pleura is then opened either by the knife or a pair of dressing-forceps, and the gloved finger is at once inserted into the wound, partly for the sake of estimating the state of the lung before the fluid has escaped, and partly because it is advisable, if the amount of fluid be large to allow it to escape gradually in order to avoid the shock that may result from its too sudden evacuation. After the fluid has escaped the state of the lung is again examined, and for this purpose, in my opinion, the most dexterous use of the probe is inferior to that of the finger. Lymph is extracted, and a search is made for pockets or secondary cavities which require opening up, or unusual conditions such as openings into lung or liver, carious bone, calcareous plates, the contents of a dermoid cyst, etc., and then the tube is inserted.

The type of tube: Many variations on the rubber tube drainage system have been advocated. The aims hoped for in these variations are, first, to ensure safety of the tube against the danger of slipping into the pleural cavity and, second, to provide a valve like action or to make possible a connection with some sort of suctiŏn or continuous drainage apparatus.

To sucure safety against loss in the pleural cavity flanged tubes improvised in various ways from a simple drainage tube or the special Pollards tube have been used. In a case in which trans-costal drainage is indicated it is probably immaterial whether any special devise other than simple drainage tubes are necessary. These must be protected against loss in the pleural cavity by suture to the wound margin with non-absorbable ligature or by the use of safety pins.

The calibre of the tubes may be determined by the thickness of the pus and presence of large exudative flakes. An old foul-smelling empyema will require larger drainage tubes. Either one large tube or two smaller ones are apparently equally satisfactory. The length of the tube needs to be only sufficient to insure that the drainage openings are well within the pleural cavity.

To secure a flutter valve action on the drainage tube a flexible thin rubber flap is tied or cemented to the firmer drainage tube and loosely incorporated in the dressings in such a way that no hindrance is furnished to the egress of pus, but the inspiratory suction closes the flaps and thus prevents suction of air into the pleural cavity. On theoretical grounds this provision is beneficial in that reexpansion of the lung and therefore obliteration of the cavity is favored. However, its application in practice seems not to hasten recovery and the drainage is not as efficient. Numerous methods of effecting a continuous suction system in an open thoracotomy or of providing for intermittent irrigation have been devised and some of these will be later described in detail.

The after treatment: The after treatment is important in trans-costal thoracotomy. The length of time that the tube is to be retained depends upon the amount of discharge and the rapidity of the closure of the cavity. In children it may often be removed at the end of ten days, though it will often be necessary to drain for a much longer time. In adults it is seldom possible to remove it before six weeks, though I have known empyemata to close in three weeks even in people of advanced age.

Occasionally it may be possible, if the discharge be very slight, to remove the tube even while a considerable cavity remains. In such a case the final closure is brought about by the absorption of the air which occupies the cavity after the external wound has closed. If this method be adopted it is wise to introduce a catheter at intervals of a few days. If the fluid that escapes be clear serum and small in amount, it is safe to continue with this line of treatment; if, however, the fluid be pus, the tube should again be inserted for a time.

Cases that are doing well may leave their beds at the end of a week or ten days. They often do better when the erect posture is assumed than while recumbent.

Chest exercises, such as blowing into a bottle, are often useful. It is only by forced expiratory efforts while the glottis is closed that actual mechanical inflation of the collapsed lung can be brought about, though no doubt the function of the affected lung may be improved by forced respiratory movements if considerable adhesions of the lung to the chest-wall have taken place.

BIRTH CONTROL

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THE BASIS OF THE BIRTH CONTROL MOVEMENT

We physicians cannot ignore the social problems of our day. Poverty, crime and social injustice are too intimately associated with disease, and illness, and human suffering. The latter cannot be eliminated without eradicating the former. We, therefore, should take a leading part in the discussion of contraception from its social aspect. But whether this aspect of the problem interests us or not, the individual and medical aspect of contraception is of immediate concern to us. Daily we see in our practice men and women in whom proper contraceptive advice would prevent a great deal of physical and psychic illness, and it is our duty to render this service. Medicine today strives not merely to be curative. Its ultimate aim is to be preventive; and scientific, intelligent, contraceptive advice is in innumerable cases the highest expression of modern preventive medicine.

There appear to be 10 million married women in the United States, fertile and neither gravid nor nursing, living with fertile partners. Thus we have twenty million husbands and wives for whom the question of spacing children or of begetting or not begetting may have to be translated once or twice a week into action or decision. Is the problem to be left entirely to propagandists and theologians? Do doctors acquiesce in a theory of ascetic marriages? Or do we study the medical aspects of the situation, asks Dr. Dickinson of the Committee on Maternal Health?

As we recognize the right of woman to choose her vocation, to participate in the offices of government, to conduct business, and select her own husband; so we recognize the right of woman to decide how many children she will bear and when she will have them. We believe, however, that the control of conception at least so far as any artificial means are concerned should remain a matter of medical case work in that married women who for good reasons should not become pregnant, should be guided therein by competent physicians. We do not advocate therefore, the indiscriminate broad-casting of birth control methods.

There is one aspect of this problem—obvious when it is stated—which is not commonly recognized, but which is constantly emphasized in the experience of physicians; that is that this is peculiarly woman's problem. Of course it is man's problem also, but men are not concerned in it in the way that women are. "It is women that bear the penalties in injury, disease and death and mental torture that are involved in it. They have a right to know how they can intelligently—not crudely and dangerously—control their sexual lives. And they are justified by the highest consideration in fighting vigorously and persistently until they have this right granted them." (William Allen Pusey, former President A. M. A.)

The decision of the modern woman is that every woman has a right to be the mistress of her own body and to decide her own maternal destiny. She feels that no group of individuals and no institution has the right to dictate to her as to whether or not she will become a mother and how many children she shall produce. According to this newer viewpoint, motherhood is such a beautiful, noble and worthy undertaking it never should be left to accident, blind chance or the caprice of nature. It should always be undertaken voluntarily and intelligently; with due regard to the mother's health, the health of children already born, the financial prospects, and the outlook on life in general.

This is the basis of the Birth Control movement. A voluntary and intelligent motherhood instead of one that is accidental and promiscuous regardless of circumstances or consequences.

DEVELOPMENTAL STAGES IN BIRTH CONTROL

The American Birth Control League had its inception in 1914 and was the outcome of a humanitarian impulse to help burdened mothers from excessive and unwanted maternity. Mrs. Margaret Sanger, then a trained nurse in New York, found many women who for health and economic reasons, needed, and wanted to limit their families, but little or nothing was being done for them. The campaign for women's suffrage was in progress and "Free Motherhood" became the slogan of the Birth Control Movement.

The American Birth Control League proper was formed in November, 1921. It reports a membership of about sixty-five thousand, stating that in 1925, 10,341 persons called at headquarters, including bishops of churches and working men who wanted help for their wives. In 1928, 32,890 letters were received. The book department has sold some 613,500 copies of Mrs. Sanger's books. It publishes the monthly Birth Control Review and runs a lecture bureau. About twelve thousand women are reported as having received instruction in the Clinical Research Bureau in New York City. Approximately twenty thousand physicians are said to have applied for information, nine thousand paid for the clinical report, and two thousand two hundred doctors in forty-eight states are reported as "cooperating by instructing women in birth control." Thirty visits and eighty letters a day are received from persons applying for information. One doctor out of every eight in America makes such application. If these statements are exact, they give a picture that calls for consideration, particularly when 7,535 doctors and over 200 county medical societies have listened to the lectures of the speaker sent out by the League.

FACTS YOU SHOULD KNOW ABOUT THE FIRST BIRTH CONTROL CLINICAL RESEARCH BUREAU IN AMERICA

The Research Bureau opened at National Headquarters under the direction of a physician, January 1923 with a two fold purpose. First, to give contraceptive information to those who are entitled to receive it under the present laws, and secondly, to carry on scientific and statistical researches of the various methods of contraception with a view to developing and encouraging those methods which have proved to be most efficient and satisfactory. At present there are 12,000 women who have received instructions at the Bureau.

All cases were taken under Judge Frederick Crane's decision of January, 1918, which makes it lawful for a physician to give "contraceptive information in New York State to married persons for cure or prevention of disease." It was in accordance with this decision, that the Clinical Research Department was organized, and the work carried on in the light of this interpretation of the law.

In the New York Clinic, at 46 West 15th Street, physicians have given contraceptive advice in 1927 to 4,521 women, for the cure or prevention of disease, the only object for which the law now permits physicians to prescribe contraception. The Clinic is now open for eleven sessions a week and has five staff physicians.

Religions Represented:

Protestant	33 percent.
Catholic	32 percent.
Hebrew	31 percent.

Less than 10 percent of the patients applying at the Clinic state that they have never used a contraceptive.

Cases Referred From:

Leading Hospitals, Organized Charities and Churches	50 percent.
Doctors and Registered Nurses in Private Practice	20 percent.
Came Directly to Office	30 percent.

PRESENT AVAILABLE CLINIC SERVICE IN BIRTH CONTROL 1928

Medical advice on birth control can now be obtained by married people with a proven need in twenty-eight organizations in twelve cities in ten states of the United States. Not taking into account early unsuccessful attempts to start birth control clinics fifteen or more years ago, this development has all come since 1923. Twelve have started in the past two years. Of the several sorts of organizations, the separate station supported by law organizations, such as the American Birth Control League, is historically first. There are eleven of these. Next, and most numerous are out-patient services conducted as parts of obstetrical or gynecological departments of hospitals, or in unattached clinics, like health centers or public health departments. There are seventeen of these, not including incidental services in hospitals which do not set up regular clinic sessions with separate records and follow-up. In addition there should be mentioned the latest type, that maintained by family welfare agencies which have undertaken responsibility for family "adjustment" in its most intimate sense by control of the number and incidence of offspring as part of general physical and psychological rehabilitation. Only two societies have reported such organized service to date, but many are considering it. As the services are not available except for clients of these particular agencies, they are not counted in with the others.

In the accompanying list a single star (*) indicates a service in or affiliated with a gynecological or obstetrical department, or one entirely under the control of physicians. A double star (**) indicates a service sponsored by a lay group and not in connection with any medical organization. (See below).

Whatever the auspices or source of support, all these services are real clinics in the sense that they are under the immediate control of physicians, who examine each applicant and administer treatment.

The hospital services are generally restricted to patients referred from other departments in the same institution for health reasons, though a few admit applicants from outside sources. As a rule, contraceptive advice is given only for therapeutic or preventive reasons, but several states, including California, Illinois, and Michigan, allow care for social or economic causes as well, such as large families, dependency or danger of dependency. In New Jersey advice may be given for "due cause." The separate stations operate under the legal restrictions of their states in the matter of admissoins.

In all the services regular medical examination is given, treatment is adapted to individual needs, and records of varying completeness are maintained, with follow-up. Except in the hospital and public health clinics, however, little attempt is made to coordinate the specific service with other health needs. In certain hospitals the birth control service is carried on in connection with such allied services as sterility and sterilization.

STERILIZATION LAWS FOR FEEBLE-MINDED AND INSANE

A study of the situation in the United States reveals the fact that the feeble-minded and generally biologically unfit class are increasing about three times as fast as the best human stock. All our institutions throughout the country devoted to the care of this class are overcrowded and only a small portion of the defective population can be cared for in these places. Some of our states are spending one-third of their total income for the care of their dependents. Most of them belong to this class. This class is responsible to a large extent, for criminals, paupers, prostitutes and general human wreckage.

So pressing is this problem that twenty states have been led to pass sterilization laws for their protection. They are: Washington, Oregon, California, Idaho, Montana, Utah, North Dakota, South Dakota, Nebraska, Kansas, Minnesota, Iowa, Wisconsin, Michigan, Mississippi, Maine, New Hampshire, Connecticut, Delaware and Virginia. These laws are new in medico-sociological practice, and before they can become most effective the public will have to be educated to the facts. These operations do not in any way interfere with the sex life of those operated on. The only effect being that they are rendered incapable of reproduction. This operation has been done in thousands of cases with success. In California there have been 5,820 sterilization operations on insane and feeble minded. In Nebraska up to July 1, 1925 there have been 8 vasectomies and 14 salpingectomies, making a total of 22 sterilizations of insane patients in state institutions.

July 30, 1929, the Nebraska State Board for the examination of mental defectives was formulated to operate in compliance with the sterilization law enacted by the Legislature.

Dr. D. D. Griffith, superintendent of the state hospital at Lincoln, is chairman, G. E. Charlton, superintendent of the Norfolk state hospital, is vice-chairman, and the other members are Dr. J. H. Babcock, superintendent Ingleside hospital at Hastings; Dr. J. H. Matthal, superintendent of the state orthopedic hospital at Lincoln, and Dr. J. A. Burford, superintendent of the Beatrice Institution for Feeble Minded.

The examiners, Chairman Westervelt of the board of control announced, will meet for the first time in October when those patients within the scope of the law from each of the various state hospitals will be examined.

According to provisions of the enactment, feebleminded and insane inmates of state institutions, and inmates who are habitual criminals, under certain conditions may be cited by the board of examination and possible operation.

Relatives of those cited for examination are notified preliminary to the board's review and may appeal to the courts if they see fit after operations have been ordered.

THE NEBRASKA LAW

What does the law allow the physician in Nebraska to do? Most of the state laws on the subject of contraception were copied largely after the Federal laws with this object in mind, namely, the prevention of the spread of lewd or obscene literature. Nebraska is classified with 10 other states where no one may give contraceptive advice, or material, or seek it, or tell anyone where it may be obtained. Physicians are not exempt, either by statute or interpretation in Nebraska, Pennsylvania, the District of Columbia, Missouri, Kansas, Mississippi, Montana, Arizona, Idaho, and Washington.

Nebraska has a general prohibition of giving information and material on contraception, affecting all persons alike, as the exemption is only for "books" and "colleges".

The phases of the Nebraska law covering this subject are printed in the appendix.

STATE AND FEDERAL LAWS NEED TO BE CHANGED

The Federal and State laws should be so amended that any woman requiring contraceptive advice and treatment shall have no difficulty in obtaining it from her physician, who in turn shall suffer no embarrassment in giving it. This was clearly expressed by the Section on Obstetrics, Gynecology and Abdominal Surgery of the American Medical Association held at Atlantic City, May 29, 1925.

> "Resolved that we hereby recommend the alteration of existing laws wherever necessary so that physicians may legally give contraceptive information to their patients in the regular course of practice."

However, Dr. Robt. L. Dickinson, Secretary of the Committee on Maternal Health, N. Y. City, in a personal communication, writes me that this resolution was not submitted to the House of Delegates until 1927, although a delegate was charged to do so in 1925 and 1926 In 1927 the resolution was referred to the Board of Trustees who referred it back to the House of Delegates for action in 1928, but no action was taken, then or since, it was passed about and finally allowed to die, unattended. Dr. Dickinson at the Minneapolis session of the A. M. A. offered the following resolution.

> "Resolved, that the Section on Obstetrics, Gynecology and Abdonimal Surgery recommend to the American Medical Association that it organize or take part in an impartial and thorough investigation of sterilization from the point of view of medicine, surgery and preventive medicine.'

This as you see did not refer at all to contraception, or changes in laws, but was merely a pious wish that the A. M .A. study a question that is becoming one that the medical profession cannot ignore longer. However, this body has ignored it because there is no record of any action.

Who is going to take the responsibility for getting these laws changed or amended?

RESUME

1. The development of 28 organizations to give information on birth control in 12 cities in 10 states has all come about since 1923. The American Birth Control League is historically first in this field, having its inception in 1914 and being formed as such in 1921.

2. After the refusal of several medical bodies and public welfare organizations to study contraception, the committee on Maternal Health was organized under full medical control in 1923; address, Academy of Medicine Building, 103 Street & 5th Ave., New York City.

3. One of the first acts of this committee on maternal health was to report on the medical situation which included the technique of contraception.

4. Although the Federal law has forbidden medical knowledge of this kind to be sent by post even to doctors, 3000 of the above reprints have been mailed. Dr. James M. Cooper's large book, "The Technique of Contraception" has been expressed to 10,000 doctors. Dr. Hannah Stone's reports on the follow up cases from the American Birth Control League have been published and mailed.

5. The present laws of Nebraska prevent the doctor giving advice to his patients that he does furnish his wife and daughters. Medical Colleges and books are exempt in Nebraska, but whatever the doctor learns by these means must be kept to himself if the law is to be obeyed.

6. The laws of Nebraska, Chapter 163, S. L. Nebraska 1929, apply only to the sterilization of the feeble minded or insane who are inmates of public institutions. Otherwise we have no eugenic law where sterilization may be applied. Eugenical sterilization is an agency which has proven to be feasible and effective from a legal, surgical, social, economic and eugenical points of view. Practically it is beginning to fill an important place in social efforts to control hereditary degeneracy.

7. The Federal and State laws should be so amended that any woman or man requiring contraceptive advice and treatment shall have no difficulty in obtaining it from her physician who in turn shall suffer no embarrassment in giving it. Who will shoulder this responsibility?

—1520 Medical Arts

REFERENCES

1. Dickinson, Robert L. Contraception: A Medical Review of the Situation, Trans. Amer. Gyn. Society, 1924, Vol. XLIX, page 95.

2. Stone, Dr. Hannah: Follow-up Report on 1465 Patients Receiving Contraceptive Advice. Medical Jour. and Herald, March 21, 1928.

FOOT NOTE—BIRTH CONTROL CLINICS

Berkley, California:
*Berkley Public Health Center, 930 University Ave.

Los Angeles, California:
*Therapeutic contraception service in Child Hygiene Division of County Health Department, two clinics.
**Mothers' Clinic, 130 South Broadway.

Pasadena, California:
**Mothers' Guidance Clinic at Pasadena Dispensary.

Denver, Colorado:
Colorado General Hospital.

Chicago, Illinois:
(a) Michael Reese Dispensary, 1012 Maxwell St.
(b) **Six Medical Centers under Illinois Birth Control League scattered through city as follows: (1) 203 North Wabash Avenue; (2) 1347 North Lincoln Street; (3) 701 West 14th Place; (4) South Side Community House, 3201 South Wabash Avenue; (5) Jewish People's Institute, 1258 West Taylor Street; (6) Mary Crane Center, Hull House, 818 Gilpin Place.

Baltimore, Maryland:
*Bureau for Contraceptive Advice, 1028 North Broadway.

Detroit, Michigan:
**Mothers' Clinic for Family Regulation, 1601 Blaine Avenue.

Minneapolis, Minnesota:
*University Health Clinic, 47 New Street.

New York City, N. Y.:
(a) Under auspices of Committee on Maternal Health. In outpatient departments of the following hospitals, as part of the Gynecological service:
*Beth Israel, 70 Jefferson Street.
*Lebanon, Caldwell & Westchester Ave. (Bronx).
*Lenox Hill, 112 East 77th Street.
*Jewish Hospital of Brooklyn, Classon and St. Marks Avenue.
*Mt. Sinai, 100th Street and Fifth Avenue.
*N. Y. Infirmary for Women and Children, 321 E. 15th St.
*N. Y. Nursery and Child's, 161 West 61st St.
*Sloane, Broadway and 168th Street.
*Woman's Hospital, 141 West 109th Street.
(b) **Birth Control Clinical Research Bureau, 46 West 15th Street.

Cleveland, Ohio:
**Maternal Health Clinic, auspices of Maternal Health Association, 311 Osborn Building.

University, Virginia:
*University Hospital, Gynecological Clinic (no fixed hours, but special clinic records).

The following extracts are the phases of the law covering this subject for Nebraska:

COMPILED STATUTES OF NEBRASKA, 1922

Section 9569. **Advertisement or sale of secret drug, etc., for females.** If the publishers of any newspaper in the state shall print or publish any advertisement of any secret drug or nostrum, purporting to be exclusively for the use of females, or if any druggist or other person shall sell or keep for sale, or shall give away any such secret drug or nostrum, purporting to be exclusively for the use of females; or if any person shall, by printing or writing, or in any other way, publish an account or description of any drug, medicine, instrument or apparatus for the purpose of preventing conception, procuring abortion or miscarriage, or shall, by writing or printing in any circular, newspaper, pamphlet or book, or in any other way publish or circulate any obscene notice, or shall within the State of Nebraska keep for sale or gratuitous distribution any newspaper, circular, pamphlet or book containing such notice of such drugs, instruments or apparatus, or shall keep for sale or gratuitous distribution any secret nostrum, drug or medicine for the purpose of preventing conception, procuring abortion or miscarriage, such person or persons so violating any of the provisions of this section shall be fined in any sum not exceeding one thousand dollars, or be imprisoned in the county jail not exceeding six months, or both; Provided, nothing in this section shall be so construed as to affect teaching in regular, chartered medical colleges or the publication of standard medical books.

EXTRACT, CHAPTER 163,

SESSION LAWS OF NEBRASKA, 1929.

Sectin 1. **Habitual Criminal—Paroled or Discharge—**Hereafter no feeble-minded or insane inmate or habitual criminal, physically capable of bearing or begetting offspring, shall be paroled or discharged from the institution for the feeble-minded or the hospitals for the insane, nor paroled from the penitentiary, reformatory, industrial home, industrial schools or other such state institution, except as hereinafter provided or by order of a court of competent jurisdiction.

Section 4. Duties of Board. It shall be the duty of the Board of Examiners to examine into the inmate traits, the mental and physical conditions, personal records and the family traits and histories of these inmates, and if after a careful examination and investigation, such Board of Examiners find that such inmate is feeble-minded or insane or is an habitual criminal, moral degenerate or sexual pervert, that such inmate is capable of bearing or begetting offspring, that children born or begotten by such inmate would inherit a tendency to feeble-mindedness, insanity, degeneracy or criminality, that such children would probably become a social menace and that procreation by such inmate would be harmful to society and that such inmate should not be paroled or discharged, as the case may be, unless sterilized, then in every such case it shall be a condition prerequisite to the parole or discharge of such inmate, that said inmate be made sterile, and that such operation be performed for the prevention of procreation as in the judgment of said Board of Examiners would be most appropriate to each individual case.

If it shall appear from the warrant of committment that any male inmate shall have been convicted for rape, incest, any crime against nature or for violation of Section 9758, Compiled Statutes of Nebraska for 1922, in every such case it shall be the duty of the Board of Examiners, if ordered by the court, to perform or to cause to be performed an operation for the castration of such male inmate; Provided, however, if such operation of castration be performed, said inmate shall be eligible to apply for a commutation of sentence within one year after said operation.

If it shall appear from the warrant of commitment or from prior warrants of commitment that any male inmate shall have been convicted of rape or incest for the second or subsequent offense upon a female person under the age of eleven years, in every such case it shall be the duty of the Board of Examiners, if ordered by the court, to perform or to cause to be performed an operation of castration of such inmate: Provided, however, if such operation of castration be performed said inmate may be eligible to apply for a commutation of sentence within one year after said operation.

CYSTOSCOPY—A NEGLECTED DIAGNOSTIC PROCEDURE

CHARLES F. HEIDER, B. Sc., M. D.,
North Platte, Nebr.

One interested in cystoscopy cannot help being impressed by the fact that although modern cystoscopy is approximately forty-five years old, little information has reached the patient. Very few have heard of it at all. This not only applies to the patient, but to the physician as well. It is singular how many physicians, even in larger sized communities, are unfamiliar with or have a vague idea of the value of cystoscopy in urogenital diagnosis. Many have never seen a cystoscopy performed, especially the physician in the smaller communities. It is he who should be familiar with the general uses and indications of the cystoscope, as he is the one upon whom the responsibility of the patient's future rests. His is the advice and direction that is accepted by the patient. We physicians are chiefly at fault for the fact that many patients suffering with some disease of the genito-urinary system seek the "irregular". He consults us a few times in regard to a hematuria or pyuria frequency, or what not, and is passed off with a prescription and told that "it will be all right in a while". Not recovering as he thinks he should, he seeks the "irregular" and there receives abundant but unscientific treatment over a long period of time. This in itself may have allowed a condition curable in its incipiency to become hopelessly incurable.

It would hardly be fair to blame all this upon the "irregular". Frequently our own members treat a case of cystitis as such when the disease was primary in the kidney, or remove a normal appendix for pain in the right side when the cause was in the urinary tract, and even explore kidney for calculi without previously having investigated the condition by means of the cystoscope.

Again, we cannot help noting the frequency with which patients request information about radium, x-ray, vaccination, insulin, and a host of other things of medicine which have received widespread publicity. It is remarkable how much the layman knows about the bronchoscope and its dramatic presentation in the present day and would not hesitate a moment in requesting its use on the least indication. The cystoscope is indicated a hundred times as often, but being used on parts of the anatomy not especially featured in the public press, he has never heard of it. It is unbelievable that such a useful and accurrate procedure in the diagnosis and treatment of urological conditions, should have so little general publicity. But, nevertheless, it is a fact .

I feel safe in making the statement that cystoscopy is perhaps the most accurate of any diagnostic procedure we possess. With the variety of modern cystoscopes most any type of urological condition or patient may be investigated. The types of instruments now manufactured make it possible to even cystoscope the infant without extreme difficulty.

Through the cystoscope the complete inner surface of the bladder may be visualized and study made of the appearance of the mucosa, the presence of diverticuli papilloma or calculi. The vesical neck may be studied and note made whether there is intravesical enlargement of the prostate; if so, what lobes and to what extent. Further, the appearance of ureteral orifices may give clue to abnormalities or inflammation. Ureteral catheterization gives an abundance of valuable information. Pyuria being the case, urine may be collected from each kidney for microscopic and bacterialogical examination. In the same way, the source of hematuria may also be determined. However, here some care must be exercised in drawing conclusions, as ureteral catheterization may produce enough trauma to cause blood in the specimen obtained.

Functional estimations by injection of phenolsulphon-phthalein intravenously, may be carried out on each kidney and impairment of either kidney noted.

If shadows are observed in the x-rays which might be interpreted as ureteral calculi, the shadow and its relation to indwelling opaque ureteral catheter will settle this point. The injection of opaque media such as sodium iodide solution into kidney pelvis and the taking of pyelogram gives accurate information as to kidney lesions such as calculi, kidney tumors, infectious conditions such as pyonephrosis and tuberculosis or obstructive lesions such as hydronephrosis. Anamolies and displacement of kidney can also be ascertained by the pyelogram.

I believe I need not further emphasize that such information is worth more to the medical man than all the misleading subjective symtoms of the patient, and weeks of guessing, and can all be obtained in less than an hour.

Let us now see what some of the reasons are for neglect of this useful diagnostic procedure.

1. Many physicians feel that cystoscopy is painful and dangerous. This of course can best be answered by saying that it is not. So far as dangers are concerned, there are none if the operator is familiar with the introduction of the instrument and uses aseptic technique. Pain may be reduced to a minimum by instillation of novacain into urethra prior to introduction of cystoscope. If it is anticipated that there is bladder or urethral pathology which makes this region more sensitive, it would be well to use caudal anesthesia, after which all manipuation can be done without the least discomfort to the patient. One should always, in the male, see if the urethra will permit the introduction of sound moderate size before introducing the cystoscope. This will make certain of the caliber of the urethra and give previous knowledge of any obstruction and facilitate the introduction of the scope. Many patients who have been cystoscoped a few times suffer little discomfort even without any anesthesia. This is probably due to the fact that the urethra has become tolerant to instrumentation. Gentleness and care should be exercised all through the manipulation; in this way the patient's confidence may be maintained.

2. Another reason for neglect of the cystoscope is reliance upon subjective and objective symptoms. Nothing could be more unreliable than dependence on subjective symptoms as given by the patient. Pain due to some lesion of the urinary tract could as well be interpreted to be lesion of gallbladder, appendix, stomach, intestines or pelvic viscera of female. The classical radiation of pain in kidney or ureteral calculi unfortunately is absent more times than it is present with the lesions. On the contrary, typical ureteral colic may be present when calculi or obstruction of ureter is not the cause. Just recently I cystoscoped a man who had had several attacks which were interpreted quite classical of ureteral colic. The cystoscope revealed the trouble to be due to enlargement of the median lobe of the prostate, causing urinary obstruction.

Insofar as objective signs are concerned, they simply point the way toward investigation. Take pyuria for illustration. Pyuria, which can be interpreted as an infection somewhere in the urinary tract, perhaps one or both kidneys, bladder or urethra. The same can be said of hematuria. Frequency could be due to one of several lesions of the genito-urinary tract. So it can be said that dependence upon subjective signs and symptoms is very misleading and intriguing, and the signs are simply present to stimulate us to further investigation before accurate conclusions can be arrived at.

3. Lack of knowledge of indications is another cause for neglect. This seems elementary, however it should be said that every chronic disease of the conducting structures of the urinary tract in which the diagnosis is not definite, should have the advantage of cystoscopy. All cases of hematuria, most cases of pyuria, and obscure types of abdominal pain should deserve investigation by this method. Abdominal masses of indefinite origin should call for thorough cystoscopic examination. In fact, many obscure conditions and vague diagnosis may be cleared up by the use of this procedure, either ruling out the urinary tract or proving it the source of disease.

4. Contra-indications to cystoscopy are so few that they may be dismissed with a few words. Very acute conditions of the lower urinary tract, advanced pulmonary tuberculosis and severe nephritis are perhaps about the only contra-indications to cystoscopy All others can be subjected to such examination without hestitation.

The subject of cystoscopy cannot be dismissed without mentioning the value of the cystscope in treatment of diseases of the urinary tract. As the treatment of urological affections does not come within the scope of this paper, we will deem it sufficient to mention only the most important.

Most ureteral calculi may now be caused to pass down ureter by dilating same with graduated ureteral bougie. Ureteral obstruction at meatus can be corrected by proper treatment through the cystoscope. Small bladder calculi are also amenable to removal by this instrument. Fulguration of bladder tumors is a very gratifying method of handling such pathology.

It must not be forgotten that infections of the kidney pelvis sometimes respond well to the direct medication through the ureteral catheter, such as the instillation of mercurochrome or silver nitrate.

In conclusion, I must express and plead for the more frequent use of this useful diagnostic procedure. The surgeon, internist and general practitioner alike should not hesitate to call in one who is capable of doing reliable cystoscopy, and thereby increase the percentage of accurate diagnosis.

You might as well keep smilin',
    For there ain't a bit o' sense
Of fidgetin' and rilin',
    An' a longin' too intense;
For most things that's worth the gettin'
    Are sure to find the Place
When you're peaceful an' a settin'
    With a Smile upon your face.

DERMATOLOGIC CLINICS

ALFRED SCHALEK, M. D.,
From the University of Nebraska, College of Medicine,
Omaha, Nebr.

Case 3. Our next patient is a young woman, 30 years of age, who has an eruption on both legs extending from the hips down. The lesions are numerous macules, closely crowded but not confluent, of the size of a pin head to a split pea. They are level with the skin with no infiltration beneath. The color varies from bright red to purple and in a few places almost black and does not disappear on pressure. No subjective sensations of itching or pain are complained of.

The history of the patient brings out the fact that severe pain and swelling occurred in most of the joints, especially the ankles, knees and elbows, at the time when she noticed the eruption, eight months ago. The arthritic pains were much improved after tonsilectomy but the skin condition did not change. She tires easily and whenever she takes a rest in bed the lesions fade, only to return as soon as she gets up again.

The pathologic process is extravasation of blood or actual hemorrhages in the tissues and is not so much of an independent skin disease as a part of a similar disturbance elsewhere. It is called purpura, of which three types are described, arbitrarily so, because they may change from one to another. Simple purpura is the mildest. A mechanical factor is unquestionably co-operative through stasis of the blood and its pressure on the vessel walls, as evidenced by the usual location of the eruption on the lower extremities. Another type is a part of arthritic manifestations and most probably due to the same infection. Our patient suffers from a clear case of rheumatic purpura. The third variety is accompanied by hemorrhages from the mucous membranes, stomach, bowels, bladder and other internal organs and is always a grave condition. At times, especially in children, it takes a rapid course with intense systemic upheavel and a fatal termination.

The etiology of purpura is not understood but it may be assumed that the causes are vasomotor, toxic and infectious. Some drugs as the iodides, mercury, quinine and others have occasionally a similar action. The permeability of the vessel walls is increased and the coagibility of the blood lowered. The blood platelets are reduced considerably in number.

The treatment of this patient must be directed toward the relief of the arthritic condition. The internal administration of coagulin and calcium salts may improve the coagibility of the blood. Complete rest in bed with elevation of the feet and constricting elastic bandages are imperative.

Case 4. The next patient is a man 54 years old but has the appearance of seventy. He is the unfortunate victim of tabes. Locomotor ataxia is not a good name, because the symptom it calls for is often absent. His pupils do not react to light, his knee reflexes are gone, he is unable to stand still with closed eyes and he has the characteristic ataxic walk. The spinal fluid examination recorded on his chart shows a four plus Wassermann and a negative gold curve which is not unusual in tabes but exceptional in paresis. The cell count is not mentioned but is an important element.

Not so very long ago tabes was considered only an occasional complication of syphilis and then more a sequel than an active manifestation. Our improved knowledge has proven that tabes is always a syphilitic disease, but it is still a question whether it is due to the spirochetes or to their toxins. It occurs in about five per cent of all syphilitic infections and is four times as frequent in men as in women. The pathology is an ascending degeneration of the posterior columns of the spinal cord.

Whatever damage was done is permanent and irreparable, but proper treatment may succeed in stopping further progress, preventing greater injury, making the patient more comfortable and prolonging his life expectancy. This cannot be accomplished by any rapid or intensive method. Intra-spinal injections of salvarsanized serum, inoculations with malaria plasmodium and other recent experiments have not given any striking results in tabes and their benefit is not adequate to the risk taken with them. As tabes is a slow chronic disease, lasting on the average ten and more years, treatment cannot be carried on continually. The clinical manifestations and the judgment of the physician must be the guide. Salvarsan, mercury, bismuth, potassium iodide will be used alternately for certain periods of time, being changed in the intervals for tonics, hydro-therapy, static electricity and others. The pains must be relieved with anodynes and at times with opiates, in the latter case carefully guarding against bringing on a habit. The ataxic walk can be greatly improved by systematic re-educational exercises.

Our patient has had treatment for his tabes for some time and comes today for a different reason. Erythematous patches with considerable itching have recently appeared on his legs after he had received a number of intra-muscular injections of bismuth. The question confronts us whether the bismuth caused the dermatitis and whether its further administration should be stopped? Bismuth has been used now over three years in the treatment of syphilis and while this is not long enough to come to definitive conclusions, it is generally accepted as an effective specific remedy, not as efficient as salvarsan, but superior to mercury. We are constantly on guard against cutaneous reactions from salvarsan and mercury, but these are so rare after bismuth that they may be disregarded. The debilitated condition and the atrophic skin in this patient are sufficient reasons to explain his skin trouble.

BULLETIN FROM THE LABORATORY OF CLINICAL PATHOLOGY, BRYAN MEMORIAL HOSPITAL

Staff Meeting, Dec. 13, 1929.

Miles J. Breuer, M. D., Lincoln, Nebr.

Clinical laboratory procedures of value in dealing with pernicious anemia.

I. Diagnosis.

A. Blood.

1. Erythrocyte count.

2. Leucocyte count. Both matters of routine.

3. Differential count (Schilling type is advisable).

a. A "shift to the right" is usually found, indicating exceptional maturity of the free leucocyte forms.

b. The differential count accomplishes the differentiation from the early types of leukemia.

c. The eosiniphile percentage is important; an increase in eosinphiles suggests animal parasites; an absence of eosinophiles, suggests the same thing, because of exhaustion of the supply.

4. Color index is always high in P. A. and rarely high in any other condition. As hemoglobin values obtained with the Dare type of hemoglobinometer are unreliable for this purpose, clinical men are requested to specify when they suspect pernicious anemia, so that the Duboscq type of colorimeter may be used, and the hemoglobin determined in mgm per 100 cc. This latter procedure is not used routinely for hemoglobin.

5. Diameter count. By means of a micrometer eyepiece, the diameters of from 100 to 500 cells can be measured, and the percentages of the various cell-sizes tabulated. In P. A. there is a predominance of the larger cells.

6. The poikilocyte percentage may be obtained by counting the number of cells per 100 that are deformed more than is seen in the normal smear. This percentage is high in P. A.

B. Gastro-intestinal Tract.

1. Achylia gastrica. There is a low acidity, usually an absence of acidity of the stomach contents in this condition. The indicator "neutral red" is of considerable assistance in establishing anacidity; if injected intravenously, it appears in the gastric juice in 15 minutes, except in cases of achylia; it serves to recognize true achylia.

2. A careful search of the stools and of the lower bowel with the sigmoidoscope ought to be made in each case, for animal parasites.

C. Pernicious anemia ought never be diagnoses on laboratory findings alone. There is a definite clinical triad, of blood findings, gastro-intestinal findings, and neurological findings, necessary for the diagnosis.

The blood picture does not serve to establish pernicious (Biermer's) anemia, as the same blood picture, that of a megalocytic hyperregeneration, is found in any condition in which there is a constant severe drain on the hematopietic tissues, such as:

Bothriocephalus latus infectation,
Ankylostomiasis,
Leucanemia,
von Jaksch's anemia,
Sprue,
Chronic Malaria,
Severe amebiasis,
Syphilis of bone marrow,
Carcinoma.

II. Treatment.

A. Regular erythrocyte counts.

B. Regular determinations of hemoglobin. For this purpose the Dare type of instrument used for routine hemoglobin determinations is unreliable. Please specify that the case is pernicious anemia, or that hemoglobin is desired in mgm. 100 cc.

C. Reticulated erythrocytes appear when the patient's blood begins to regenerate rapidly, and their percentage can be estimated with the aid of a vital stain, like brilliant cresyl blue.

D. Nucleated erythrocytes appear in blood smears, and are also an index.

THE END OF THE ROAD

Frances E. Pope

We who have passed our threescore years and ten
Have learned what courage human hearts must hold;
And now, for life's last test, we pray again
For courage to be old.

We do not realize our fleeting days;
We watch the sweep of life and feel its thrill,
Admire its progress, its achievements praise,
And share its service still.

Until, some day, the tasks once lightly met
Grow strangely irksome to our weakened hold;
Our steps are slow, we helplessly forget
And know that we are old.

The young compassionate us for the lapse
Of memory, for failing eye and ear;
They smile at us, indulgently, perhaps;
To them old age is drear.

Oh, strong, glad heart of youth, it is not so!
Though ends the road among the falling leaves,
An open gate beyond the sunset glow
The trustful soul perceives.

Of earthly blessings, age is not the least,
Serene its twilight sky, the journey past;
Like that rare draught at Cana's marriage feast,
Life's best wine is the last.

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ANNUAL DUES—CALL FOR PAPERS

The annual dues for 1930 are now delinquent. Send $8.00 plus your local County Society dues to the Secretary of your County Society at once.

If you wish to read a paper before the next annual meeting in May, send your name and title to the office of the secretary, R. B. Adams, Centre-McKinley Building, Lincoln, Nebr., right away.

NOTICE OF PROPOSED AMENDMENT TO CONSTITUTION

It is proposed to amend Section 3 of Article VIII of the Constitution of the Nebraska State Medical Association to read as follows:

"Except that the Councilors shall be elected by a majority vote of the delegates present from their Councilor District at the meeting of the House of Delegates on the morning of the last day of the general session."

The Journal of the Iowa State Medical Society reports that 77% of the physicians of the state belong to the state society. Nebraska has 1200 members of the state association out of 1800 physicians in the state or 66% membership.

The Iowa University College of Medicine is prepared to give extramural postgraduate instruction in gynecology, obstetrics and pediatrics upon specific invitation of Iowa county medical societies. Here is something that should interest The Nebraska University College of Medicine and the Nebraska profession.

THE FEE-SPLITTING PROBLEM

The recently codified medical practice act of Nebraska, under cause for "Revocation of License" mentions—"Division of fees or agreeing to split or divide fees received for professional services with any person for bringing or referring a patient without the consent of said patient or his legal representatives".

The By-Laws of the Nebraska State Medical Association under "County Societies", Sec. 11, says:

"Whereas, it has become notorious that commissions are asked for and given; be it known that such practice is entirely against all ethical standards and is to be severely condemned. This Association hereby puts itself on record against such practices, and earnestly solicits the assistance of all county societies for the suppression of this evil, even to the extent of the expulsion of such offenders. Tolerance of such practice upon the part of the county societies will be visited by the proper discipline from this Association."

The Principles of Ethics of the American Medical Association, says:

"Section 3. When a patient is referred by one physician to another for consultation or for treatment, whether the physician in charge accompanies the patient or not, it is unethical to give or to receive a commission by whatever term it may be called or under any guise or pretext whatsoever."

The Fellowship Pledge of the American College of Surgeons contains the following obligation:

"Moreover, I pledge myself, so far as I am able, to avoid the sins of selfishness; to shun unwarranted publicity, dishonest money-seeking, and commercialism as disgraceful to our profession; to refuse utterly all money trades with consultants, practitioners or others; to teach the patient his financial duty to the physician and to expect the practitioner to obtain his compensation directly from the patient; to make my fees commensurate with the service rendered and with the patient's rights; and to avoid discrediting my associates by taking unwarranted compensation."

And fee-splitting goes on blithely as if there were no deterring laws or by-laws. The organized profession has succeeded about as well in breaking the fee-splitting habit as has the government with prohibition enforcement. This is stating a fact with brutal frankness. Some people affiliate with the church to cloak their sneaking habits and some medical men do the same thing by medical organizations. To gain Fellowship in the American College of Surgeons which is the aristocracy of the American surgical world and is, therefore, considered a desirable attainment, a surgeon denies fee-splitting in his application, and after some casual formalities by the credentials committee he is recommended and accepted for membership, takes the Fellowship Pledge and returns home to continue to give "Christmas presents" in bundles of twenty dollar bills running into the hundreds of dollars, to the general practitioners who refer patients, even as before he was consecrated before the College of Surgeons.

Many variants of the above are resorted to to circumvent the intent of the laws applicable to fee-splitting. You cannot legislate morality into people.

The physician who openly defends fee-splitting stands on a higher moral plane than the one who openly denies it and secretly does it. He who defends fee-splitting believes it is right; he who openly condemns it and secretly does it is a moral leper to be despised of all men.

DR. S. WEIR MITCHELL—PHYSICIAN, NOVELIST, POET

Dr. S. Weir Mitchell, one of the most brilliant of all medical writers, was born February 15, 1829—one hundred one years ago. He was the son of Dr. John K. Mitchell, for many years professor of practice of medicine at Jefferson Medical College. Weir Mitchell was graduated from Jefferson Medical College in 1850. He spent a year in Paris during 1851-52 and fell under the tutelage of Claude Bernard, the father of Endocrinology. It is said that during the first ten years of a general practice in Philadelphia his income did not exceed $1,000; at the height of his fame it is reported to have exceeded $100,000. He was appointed an assistant surgeon in the Union Army in 1862, where he became interested in nerve injuries and there found his life work, neurology. In 1872 he published, "Injuries of Nerves and Their Consequences", the earliest work on the subject. He introduced the "Rest Cure" for nervous diseases in 1875, consisting of rest in bed, good feeding, massage, electricity. "Fat and Blood," summing up his ideas if the rest cure, published in 1877 was translated into French, Spanish, Italian, German and Russian. He was one of the first to emphasize the importance of eye strain as a cause of headache, in 1874. After establishing a reputation in medicine at fifty, he turned to romance and poetry and became one of America's foremost novelists. He wrote several volumes of poems. Among his most successful novels were "Hugh Wynne", "The Adventures of Francois" and "Westways" written when he was eighty-four and pronounced his best work. He died in 1914 at the age of eighty-five.

VIOLATION OF MEDICAL PRACTICE ACT: PROCEDURE AND EVIDENCE

(Williams v. State (Neb.), 224 N. W. 286)

The following supreme court decision is based on a case originating at Genoa, this state, and shows that court decisions depend on proven specific acts, rather than on common knowledge:

Mrs. Morris was about to be confined. She did not desire a man physician but wished, if she had to have anybody, to have the defendant, Mrs. Williams. Mrs. Williams was not licensed to practice medicine but was the wife of a licensed physician. According to the evidence, Mr. Morris telephoned to her husband, Dr. Williams, telling him that a physician was needed. Dr. Williams asked if he should bring a nurse with him. Morris replied that he would like to have Mrs. Williams. As Dr. Williams was about to go out on another call, he arranged for Morris to call for Mrs. Williams and take her to the patient. Dr. Williams testified that he expected at that time to reach the patient before she was delivered, but that a storm delayed him and that the child was born before he arrived. Mrs. Williams apparently rendered such service as she could. Thereafter she was prosecuted and convicted of practicing medicine, obstetrics and surgery without a license. Special counsel assisted in the presecution, appointed by the court but paid by private citizens. The defendant produced Dr. Williams, her husband, as a witness on her behalf, but through him the prosecution brought out on cross-examination that the defendant had been present at other obstetric cases and performed similar services in them. The theory of the prosecution seems to have been that the attendance of Mrs. Williams on Mrs. Morris was pursuant to a scheme or device between her and her husband to enable her to practice obstetrics without complying with the law. From her conviction, Mrs. Williams appealed to the supreme court of Nebraska.

Mrs. Williams, in support of her appeal, claimed that evidence of acts other than that with which she was specifically charged was incompetent and inadmissible. With this contention, however, the court did not agree. Evidence of other acts occurring so near together in point of time and so nearly similar in character as to lead to a logical inference that they were committed in pursuance of some deliberate purpose or scheme planned beforehand is admissible even though those other acts may constitute another criminal offense. Such evidence, however, said the court, to be admissible must be properly adduced, and that was not done in this case. The husband of the defendant was produced by her as the witness on her behalf. In direct examination he was not examined and did not testify as to any transaction other than the one on which the prosecution was based. But on cross-examination he was required to testify, over the objection of the defendant, concerning the facts and circumstances involving similar but entirely independent transactions, in no manner brought out or referred to in his direct examination. This was contrary to the well known rule that the right to cross-examine a witness is confined to matters or transactions brought out in direct examination. If adverse parties desire to examine a witness on other matters they must call him for that purpose and make him their own witness. In this case the violation of the rule prejudiced the defendant, as the witness was her husband and was thus required to become a witness against his wife, contrary to the statutes governing such testimony.

"It may be," said the court, "that the prosecution was inspired somewhat by business competitors of Dr. Williams." A physician who testified for the prosecution admitted that he intended to help pay the attorneys who were prosecuting the case. The appointment of counsel who are employed by or are to be paid by private citizens, to assist in the prosecution of criminal cases, is not looked on with favor. But the defendant did not challenge the right of counsel to assist in the prosecution of the case nor ask any ruling concerning it even after it developed during the trial that the compensation of counsel assisting in the prosecution was to be paid by private citizens. It was too late for the defendant to complain for the first time in the course of her appeal.

The evidence showed that the defendant went to the home of the patient at the request of Dr. Williams, her husband, after having been advised by him that he would follow in fifteen to twenty minutes, that a storm came up which delayed him, and that in the meantime the birth of the baby became imminent. This made the case, as far as the defendant was concerned, an emergency case in which she was justified in rendering such assistance as she may have been qualified to give. In so doing she was within the purview of the exception of the statute, which provides that it shall not apply to "nurses in their legitimate occupations." The judgment of conviction against her was therefore reversed and the case dismissed. (*J. A. M. A.* Nov. 30, 1929).

DOCTOR AND WIFE CELEBRATE SIXTIETH WEDDING ANNIVERSARY

Dr. and Mrs. Robert C. Talbot of Broken Bow observed the sixtieth anniversary of their marriage on Christmas day. Both Dr. and Mrs. Talbot are natives of Indiana coming to Nebraska in 1879 and settling on a homestead one and one-half miles from Berwyn, Custer county.

Doctor Talbot graduated from the Miami Medical College, Cincinnati, in 1870, and practiced his profession in Indiana for nine years. He was the first physician in Custer county and practiced over a wide territory. He was a leading member of the Custer county Medical society and served as its president for a number of years. He was elected to the office of treasurer of Custer county in 1884 at which time the family moved to Broken Bow which has been their home since with the exception of the cold winter months which he and Mrs. Talbot spend in their home at Reedley, Calif. In addition to having served as county treasurer for four years, he was a member of the board of trustees of Broken Bow. He fought in the Civil war, enlisting with Company "H" One Hundred and Thirty-Second Indiana Volunteer Infantry.

Dr. Willis E. Talbot, Broken Bow, is a son.

The Nebraska State Medical Journal extends congratulations.

Dear Reader:

The Journal and the Cooperative Medical Advertising Bureau of Chicago maintain a Service Department to answer inquiries from you about pharmaceuticals, surgical instruments and other manufactured products, such as soaps, clothing, automobiles, etc., which you may need in your home, office, sanitarium or hospital.

We invite and urge you to use this Service.

It is absolutely free to you.

The Cooperative Bureau is equipped with catalogs and price lists of manufacturers, and can supply you information by return mail.

Perhaps you want a certain kind of instrument which is not advertised in The Journal, and do not know where to secure it; or do not know where to obtain some automobile supplies you need. This Service Bureau will give you the information.

Whenever possible, the goods will be advertised in our pages; but if they are not, we urge you to ask The Journal about them, or write direct to the Cooperative Medical Advertising Bureau, 535 N. Dearborn St., Chicago, Illinois.

We want The Journal to serve you.

EDITORIAL PARAGRAPHS

The date of the next Nebraska Medical State Board examination is set for February 4, 5 and 6.

Proper credit is hereby given to Dr. J. M. Patton for the memorial to the late Dr. Harold Gifford in the January *Journal*.

If your dues are not now paid you are delinquent February 1st, and not entitled to Medical Defense or the Nebraska State Medical Journal —and confidentially, you ought to be ashamed of yourself!

To carry on the program of providing additional hospital facilities for disabled veterans, the Congress has appropriated $15,950,000. Half a million dollars will be spent at the new Lincoln Veteran's hospital this year.

Having conceded that women have the same right to smoke that men have, let us add that it is not very nice for them to do so. Wonder what the impression made by a smoking mother on her small boy or girl?

It is thought by scientific men that the somewhat loudly heralded discovery of the organism causing influenza, some weeks ago, is not justified by the exact facts. Possibly the press got hold of something prematurely, as often happens.

Small-pox is again lurking in every center of population, large or small. Vaccination has of recent years been much neglected by profession and laity alike. A widespread epidemic of smallpox may at any time result because of our negligence to protect ourselves.

What a baby eats will affect him as much as eight years later is brought out in an editorial in the *J. A. M. A.*, recently. The need for calcium and other building products such as fruit juices, whole milk and fresh vegetables in the earlier years is thus stressed.

The report of the Surgeon General of the Public Health Service states that not one case of quarantinable disease has been imported during the past year, which is quite a record. Quite a number reached quarantine, notably of bubonic plague and cerebrospinal meningitis.

President Vest of the West Virginia Medical Society says: "Only two things are necessary to make the profession the invincible force it ought to be—organization and work. Our profession is essentially one of idealism, altruism and uplift, and in no way can we further our ideals more than by organization and activity." No greater truism has ever appeared in print.

Practical experiments with a revival of the preceptor system of medical teaching are now in process of evolution and application at the Universities of California, Wisconsin and Michigan, and Harvard University, says the *Illinois Medical Journal*. Experiments along the same line on a limited scale and in modified form have been made by other schools, notably the Nebraska University College of Medicine, and Creighton University College of Medicine.

Psittacosis, or parrot fever, comes to claim our attention because of several dozen persons at present afflicted with it and a number of recent deaths. The deaths occurred in Pittsburg, Toledo, Baltimore and New York state. The afflicted are reported from Ohio, Maryland, New York and other states, with unconfirmed reports of cases in California. It is contracted from afflicted parrots by petting them—bringing them to the face. The disease resembles typhoid fever with pneumonia. It is well in this connection to remember that all pets are potential disease carriers.

"Undulant Fever in Man and its Relation to Abortion Disease in Livestock" is the title of a paper read by Dr. L. Van Es of the Department of Animal Pathology and Hygiene, Nebraska University Experiment Station, before the annual meeting of the Nebraska Veterinary Medical Association at Grand Island, December 10-11. This is a paper well worth reading by anyone interested in the subject of undulant fever, since it gives the angle of the veterinarian and supplements our knowledge of the disease. It is published in pamphlet form and can be had by application to the Secretary of Agriculture, Lincoln.

A correspondent writes to ask whether a doctor can be compelled to minister to deadbeats who have outworn their welcome. A doctor's time is his own. He is under no more obligation to respond to a call than is a carpenter, a butcher, a grocer. A worthy poor should always have a doctor's kindest attention; the deadbeat needs to be pushed on to the newest doctor in the community who is keen for practice. To the professional deadbeat, the doctor is the best physician in seven counties while he can be "worked"; after he finds out he has outworn his welcome he will do all in his power for a newer doctor and forever after hate his earlier doctor-friend.

The *International Medical Digest* in the December, 1929, number says editorially, evaluating tonsillectomy: "Judging from the statistics which have been gathered by these authorities, the impression is gained that tonsillectomy is not as valuable a procedure in the prevention of rheumatic infection and the prevention of heart disease as it has always been regarded. Future study, however, will have to be made before this belief will be widely accepted. There are many extenuating circumstances which will have to be taken into consideration before definite conclusions can be reached. Virulence of the infecting organism and individual resistance are at least two of them. In addition, the existence of foci other than those in the tonsils must be considered."

THIS MONTH IN MEDICAL HISTORY

January 1930.

Jacques Dubois (Sylvius) who named the jugular, subclavian renal and popliteal vessels and for whom the aqueduct of Sylvius was named published his writings in 1430. He died January 13, 1855.

Ether, formerly called sweet oil of vitriol, was first called ether by Godfrey in 1730.

Joseph Guichard Duverney, professor of anatomy in the University of Paris, wrote the first treatise on otology. He died in 1730. Duverney's gland is a synonym for Bartholin's gland.

January 1, 1848, Rushton, Clarke and Co. of New York published the first American edition of J. Y. Simpson's "Account of a New Anaesthetic Agent as a substitute for Sulphuric Ether in Surgery and Midwifery".

In 1830 there were twenty Medical Schools in the United States with an average attendance of about 100 students each. There had been established at that time also twenty-one medical periodicals of which eight had been published in Philadelphia and four in New York.

January 1830. The Journal of Health (Philadelphia) said: "The United States Bank, St. Andrews' Church, the medical department of the University and several stores and dwellings are being heated by means of a furnace in the basement and heated air conveyed to different parts of the buildings. A description and plan of the furnaces employed, we are in hopes of being able to lay before our readers on a future occasion."

February 1930.

Dr. John Conrad Amman was the author of "Surdus Loquens" an ingenious method of teaching the deaf to hear. He died at Amsterdam about 1730.

John Arbuthnot died in London February 27, 1735. He was physician to Queen Anne. He wrote on "The Effects of Air on Human Bodies" because of the asthma from which he suffered and which eventually caused his death.

Rene Theophile Hyacinthe Laennec was born at Quimper, Brittany, February 17, 1781. He was a student of Corvisart, Napoleon's physician, and became the inventor of auscultation and the stethoscope. Laennec himself died of tuberculosis at 45, his mother having died of the same disease when he was five years old.

Dr. James Craik was a Scottish-American physician who served under Braddock and Washington 1755 to 1775. He became Washington's family physician and attended him in his final illness. He died February 6th, 1814.

Dr. William Shippen and Dr. Cochran submitted to Congress (February 14, 1777) a plan of organization for the Revolutionary Military Hospitals. A committee report on this plan in the hand-writing of Dr. Benjamin Rush was given to Congress February 27, 1778.

DOCTOR E. WILLARD POWELL*

W. P. WHERRY, M. D.,
Omaha, Nebr.

Mr. Chairman, Ladies and Gentlemen, Fellows: We have gathered together this afternoon to honor the memory of Doctor E. Willard Powell.

"There is so much good in everyone
If we will only mind it—
So when we keep that thought in view
And seek the good—we'll find it.

Just overlook the faults you see—
For all of us folk's get them
And so its up to you and me
To just up and forget them.

Remember only lovely things
For everyone (now mind it)
Has some real loveliness within
And if we seek—we'll find it."

Thus the poet expresses succinctly a thought, a theme.

The relative difference between a precious stone and a common stone is not an essential difference—not a difference of substance, but of arrangement of the particles—the crystallization. In substance the charcoal and the diamond are the same but in form and affect they widely differ.

Dr. Powell was, as you and I, one of us. His capabilities measured up to that accepted as standard, yet he was different.

"You're measured as a workman
By just the things you do
When there's nobody looking
And no one knows but you.

---

*Memorial Address delivered at the unveiling of a Tablet to the memory of the deceased at Covenant Hospital, Omaha, December 22, 1929.

Your only real value
Is what you think and say
When no one ever hears it
And shorn is stripped away.

Your power is determined
By simply what is found
To be your code of honor
When no one is around.

Your character is founded
Without the slightest doubt
On just your course of action
When none will find out.

You're noted—just remember
By only what is true
No matter what the seeming
Of all you say or do.

For truth cannot be covered
And so we stand or fall
Just by the fundamentals
Of what we are—that's all."

A great deal of the joy of life consists in doing perfectly, or at least to the best of one's ability, everything which he attempts to do. There is a sense of satisfaction, a pride in surveying such a work—a job well done, rounded, full, exact, complete in all its parts—which the superficial man, who leaves his effort in a slovenly, slipshod, half finished condition can never know. It is this conscientious completeness which turns work into art. The smallest thing well done, becomes artistic.

This was E. Willard Powell.

It was a glorious privilege to know Doctor Powell, to plan with him, to work, to fight. During the more recent years it was my lot to not only know his inner thoughts, but to be so close to him in his mental reactions that his true character, his true worth was emphasized most forcibly.

There is no more valuable associate than the man to whom you can delegate something and then forget it, in the confident expectation that the next time it is brought to your attention, it will come in the form of a report that the thing has been done. When this self-reliant quality is joined to executive power, sincerity of purpose, loyalty and common sense, the result is a man whom you can trust. Dr. Powell had these attributes. Even more, the world admires a fighter, when enrolled on that side is honesty, truth, sincerity, self-sacrifice for an ideal.

Perhaps no better example of this God-like faith could be cited than the stormy period during the conception and construction of our Medical Arts Building. Dr. Powell carried the burden of this venture throughout that trying period. His was the mind that worked out details—his was the forceful character that carried on straight when others plotted—his was the arm that fought when others ran away—his was the supreme sacrifice when he essentially gave up his practice to force the last ditch against seemingly unsurmountable odds, without reward of money or seemingly of recognition.

This characteristic is the purpose behind the honor today.

Perhaps no greater cloud hangs over our profession than the acceptance of this building without thought or favor to the one man who made it possible.

I honor any one who in the conscious discharge of his duty dares to stand alone; the world with ignorant intolerant judgment may condemn; the countenances of relatives may be averted and the hearts of friends grow cold, but the sense of duty done shall be sweeter than the applause of the world, the countenance of relatives, or the hearts of friends.

Dr. Powell has been a part of this hospital since its organization, others came and went. In time of stress when the administration needed wholesome, honest, sincere advice and assistance, he was out in front.

It is natural that the gratitude of mankind should be drawn to their benefactors, yet we have not gathered here today to confer a medal to his memory for any particular thing done, but as the expression of grateful appreciation for the man, his intrinsic integrity, his loyalty.

"Tis what we finish—not what we begin
By which we rise
To try is good, but not enough whereby
To gain the prize
We win by what we do—not by the thing
We meant to do
'Tis where we stand—not where we ought to be
That makes our view.
For power is given everyone to be
The man he would
A mere intent will count for naught though it
Be fine and good
But effort must be followed up by work
Accomplished, done
For only by completed tasks is life's
Great victory won."

And so by this tablet we honor a changeless friend—a faithful servant—at all times, in any emergency, under all conditions—Doctor E. Willard Powell.

DAWSON COUNTY AUXILIARY DOING THINGS

"Dear Mrs. Long:

You will, I know, be happy to hear about the nice meeting of the new auxiliary, born under your genius last October. And it was just one splendid inspiration to both organizations. Three new names were added to our auxiliary, Mrs. E. C. Stevenson of Gothenburg, Mrs. O. P. Rosenau of Eustis and Mrs. Esther Westover of Gothenburg. Mrs. Westover is a young mother (registered nurse) who saw service behind the front lines in France—was in Paris on that memorable Sunday, when "Big Bertha" paid the Hun's respect to the children of St. Mary's. Mrs. Westover helping to gather up the broken little bodies. So that is to say—we will have added the value of 'shock troops'. The spirit was fine—and for a truth, it neared the atmosphere of an aristocracy, that one has earned the right to belong to."

The auxiliary, with Mrs. Wycoff of Lexington in the chair, took up the question of an educational program along lines of immunization of children against diphtheria. An enlightening discussion, led by Mrs. Esther Westover, emphasized the need of education among the young mothers. Mrs. Arthur Anderson made a very dramatic appeal for the scientific viewpoint in the consideration of the daily problems that thunder at the door of the doctor's wife. In all, it was a very scientific meeting of a very unscientific membership, but intensely interesting and widening in its circle of possibilities. The charm and cheery good humor of the president, Mrs. Wycoff, made all feel like heroes and eager to come again.

THE SOCIETIES

The **Omaha-Douglas County Medical Society** meeting, Dec. 10, 1929, was called to order by President Langdon.

The following candidates were unanimously elected to membership: Dr. Nancy Catania, Dr. M. C. Green, Dr. F. E. Dillenbeck, Dr. Merlin R. Wyatt.

Dr. Lemere reported for the committee a resolution on the death of Dr. Harold Gifford. It was moved by Dr. Lord that the report be approved by a rising vote. Unanimously carried.

Dr. F. W. Hartman, Detroit, was introduced by Dr. W. B. Moody. Dr. Hartman spoke on the Production and Vascular Effects of Renal Insufficiency. Experimental work was described on animals, particularly the dog, where x-ray exposures were used to produce experimental nephritis. The degree of nephritis was tested out by various indicators testing the functional ability of the kidneys with interesting results. The most prominent features of blood pathology were the symptoms incident to the effects of nitrogen retention; the other chemical constituents from the exposures do not play as important a role as was heretofore supposed. The calcium content of the blood does play an important role in the checking or producing of convulsions in experimental animals. Dr. Hartman also brought out the interesting fact that kidney pathology alone is in a good many instances responsible for cardiac hypertrophy and vascular hypertension. The subject was profusely illustrated by lantern slides.

Reels showing "Surgical Treatment of Peptic Ulcer" were shown. This was arranged for by Dr. D. T. Quigley through the courtesy of the Eastman Kodak Co.

The result of the election was announced as follows: President, Dr. C. W. Pollard; vice president, Dr. A. S. Pinto; secretary-treasurer, Dr. Herman M. Jahr.

Delegates to Nebraska State Medical Association: Dr. Charles Moon, Dr. Louis Bushman, Dr. W. B. Moody, Dr. Glenn Miller.

—H. M. Jahr, Sec.

A regular meeting of the **Lancaster County Medical Society** was held in the Sharp Building, December 3, 1929, Dr. Roscoe L. Smith presiding.

Dr. G. M. Byrne described a case of multiple cysts of the jaw, treated by excision of the buccal plate and removal of some of the teeth. The initial symptoms were pain in the jaw and at last report the jaw had practically healed.

The first paper of the evening was on "Knee Joint Injuries" by Dr. F. B. Hollenbeck. He said that many injuries occur in the knee joint, one of the most important of which is injury to the semilunar cartilages. The internal semilunar is said to be injured ten times as often as the external, but probably the proportion is greater. He described the anatomy of cartilages in some detail. The chief symptoms are pain, caused by twisting of the knee in a semi-flexed position followed by interference with motion of the knee joint, and sometimes locking of the joint. The diagnosis is dependent upon three points—first, the flexion of the knee at the time the twisting injury occurred, second increased synovial fluid, third tenderness localized at a point just internal to the patellar tendon on the anterior border of the head of the tibia. X-ray affords no help. Treatment consists in initial immobilization. If after a period of time this is not effective, operation should be undertaken. If the diagnosis of displaced cartilage is correct the result should be about 90% good. Average disability is about four months. He showed a case in a young man who had slipped and fallen from a stepladder. He had been operated on six weeks ago with an incision on the inside of the knee and the anterior half of the cartilage removed. The knee was splinted for one week, after which the man was allowed to walk. The paper was discussed by Drs. Hickman, Graham, R. L. Smith and Fahnestock.

Dr. M. J. Breuer gave a paper on tuberculosis. He discussed at length the modern aspect of tuberculosis and stressed particularly the point that no single test or physical finding should be used in the diagnosis of tuberculosis, but that all data should be accumulated and a diagnosis of tuberculosis made after considering the laboratory tests, physical findings, mental condition and all the environmental conditions surrounding the patient. He felt that only then could the diagnosis be justifiably made. In the discussion that followed it was pointed out that for the purpose of standardization tests were of great value in making the diagnosis. The paper was otherwise variously discussed by Drs. Hancock, Waite, Albin and Hollenbeck.

The annual meeting of the **Lancaster County Medical Society** was held in the Sharp Building, December 17, 1929. The following officers were elected:

President—Dr. George H. Walker.

Vice President—Dr. Harry Taylor.

Secretary—Dr. Roy H. Whitham.

Treasurer—Dr. Clayton F. Andrews.

Delegates to the State Convention—Dr. J. E. M. Thomson; alternate, Dr. B. F. Williams. Both for a period of 3 years.

Censor—Dr. Wesley C. Becker, for three years.

Board of Trustees—Dr. J. S. Welch, for five years.

The secretary reported that during the year there have been sixteen meetings of the society. At these meetings there have been ten out-of-town guests not including exchange speakers from the Douglas and Gage County Medical Societies. The total paid membership is now 120.

On March 5, 1929, a banquet was held in honor of Dr. A. R. Mitchell to commemorate his fiftieth year in the practice of medicine in Lincoln.

During the State Fair the society furnished the personnel for the emergency hospital on the Fair Grounds.

As a whole the year has been a substantial one.

Three monthly numbers of the Lancaster County Medical Society bulletin have been published. These have been sent to all members of the society and to about 800 other members of the State Medical Society. The cost of publication has been paid through advertising, the only expense incurred being the mailing cost. Attempt is being made to classify this bulletin in such a way that the postage will be reduced to a nominal sum.

The secretary submitted the following recommendations: (1) That the society purchase a guest-book and that the visitors be requested to sign this book. (2) That the society consider the purchase of a mimeograph for use in the preparation of pathological conferences and for preparing announcements of meetings. (3) That the executive council at this time appoint an editor for the Lancaster County Medical Society bulletin, this appointment to be confirmed by the society.

Mr. Jack Cohen addressed the society and considered the business relation between the physician and his patient, making a plea for a businesslike attitude toward the financial aspect of medical practice. He proposed that the Lancaster County Medical Society maintain a business office with a telephone exchange for the purpose of handling delinquent accounts and giving information regarding the financial status of patients in this county. It was moved, seconded and carried that this proposal be referred to a committee for its consideration after a few questions from the floor.

—Roy Whitham, Sec.

The regular meeting of the **Otoe County Medical Society** was held at The Frontier hotel, Nebraska City, following a dinner. Dr. Palmer Findley, Omaha, spoke on "State Medicine"; Dr. E. L. MacQuiddy, Omaha, on "State Labor Commission".

The **Richardson County Medical Society** held its monthly meeting at the Hotel Weaver at 6:30 o'clock in the form of a banquet.

The program included the following numbers: Paper, "Angina Pectoris", read by Dr. M. L. Wilson, followed by a discussion on the paper by Dr. H. R. Miner. Dr. E. R. Hayes read a paper on "Eczema". "Surgical Problems of the Chest", was the title of a paper given by Dr. O. F. Lang.

Thirteen attended the meeting.

The **Dawson County Medical Society** celebrated its twenty-seventh natal day, January 3, at Gothenburg, where the society was born, by a dinner at the local hotel, the members of the Women's Auxiliary being guests of honor.

Dr. Lydia Schaum, late of Peking, was the speaker of the evening. She proved herself a trained speaker and with no deviation from the classic or the scientific in medicine or surgery, by her magnetic power to get psychical contact with her audience, gave every one of her listeners an impact with China—China sick, physically, politically and spiritually, that was little short of collision and concussion. In the face of such astounding truths, where could there be found room, in this, our Christian America, room for the big-mouthed senator who bawled out in the senate of the U. S. "The brotherhood of man and the fatherhood of God in the U. S. ends with the coast lines!"—says the Gothenburg Times.

The following officers were elected: Dr. A. E. Reeves, Farnam, president; Dr. W. J. Birkofer, Gothenburg, secretary-treasurer.

At the annual meeting of the **Gage County Medical Society**, December 10, the following officers were elected: President, Dr. J. W. Thomas of Wymore; vice president, Dr. J. C. Waddell of Beatrice; secretary, Dr. F. W. Buckley of Beatrice.

Dr. C. P. Fall addressed the society on the open method of treating serious fractures and showed the results of his work during the years that x-ray records have been made.

The **Lincoln County Medical Society** held its regular monthly meeting, December 12th, at the Yancey Hotel, North Platte.

Election of officers for the ensuing year resulted as follows: Dr. Charles F. Heider, North Platte, president; Dr. H. H. Walker, North Platte, secretary; Dr. J. C. Newman, Wallace, delegate to state association.

At the regular meeting, January 9, Dr. T. E. Dent gave a paper on "Local Anaesthesia in the Reduction of Fractures".

HUMAN INTEREST TALES

Dr. G. W. Earl has moved from Litchfield to Gibbon.

Dr. M. F. Hall, formerly of Neligh, has located at Long Pine.

We regret to learn of the illness of Dr. A. I. MacKinnon of Lincoln.

Dr. Charles H. DeWitt, formerly of Glenwood, Iowa, has located at Wahoo.

Dr. and Mrs. C. M. Swab, Omaha, spent the holidays at Womelsdorf, Pa.

Dr. P. B. Gillespie, Grand Island, is reported ill with pneumonia in an Omaha hospital.

Dr. C. D. Barnes, well known Tecumseh physician, has been reported seriously ill lately.

Dr. A. O. Fasser and Miss Ann Van Druff, Fremont, were married New Year's day.

Dr. Ralph Hart, surgeon at San Quentin, Calif., prison, visited his mother in Omaha recently.

Dr. M. B. Lathrop, formerly of Omaha, has located at Wahoo and will be associated with the Drs. Way.

Dr. W. B. McTaggert, a former Columbus, Nebraska, boy, has located in Greenwich Village, N. Y.

Dr. Benjamin Greenburg, interne at the University Hospital, Omaha, submitted to an appendectomy recently.

Dr. S. A. Swenson, Oakland, gave a talk on contagious disease before the local Woman's club last month.

Dr. Harry Vander Kamp, formerly of Madison, Wisconsin, has located at Chadron in association with Dr. C. M. Pierce.

Dr. Alfred Brown, Omaha, was elected vice president of the Western Surgical Association at the recent meeting at Del Monte, Calif.

Dr. Gale Boyd, University of Nebraska graduate early in February, has an interneship waiting for him at McGill University hospital, Montreal.

Dr. E. R. Hays, Falls City, broadcasted from the headquarters of the American Medical Association in Chicago last month, a talk on pneumonia.

Dr. A. D. Munger, Lincoln, was elected secretary-treasurer of the Southwestern Branch of the American Urological Association at the meeting at Dallas, Texas, December 7.

Dr. Charles E. Remy, formerly located at Ainsworth and later engaged in institutional work in this state, has been elected superintendent of the 300-bed Montifiore hospital at Pittsburg, Pa. He is a son of the veteran Dr. G. O. Remy, Ainsworth.

REPLACEMENT OF THUMB NAILS

J. Eastman Sheehan, New York (*Journal A. M. A.*, April 13, 1929), reports the case of a boy, aged 16 years, who suffered the loss of the nail from the left thumb. At the time he was examined, there was no longer any nail growth; at about the level of the lunula there was a disintegrating mass, while toward the point of the thumb the nail bed had given place to cicatrized tissues, warped and folded in leaves. There was considerable pain. It was evident, especially in view of the failure of previous interventions, that the problems was one of replacement—of introducing a nail that would grow. From this consideration two questions arose: Could nail substance transferred to an area in which growth had ceased be expected to grow? If so, from what area should it be taken, and what would be the subsequent history in the area to be denuded? On reflection as to the nature of the nail substance and as to the process of its production, it was recognized as being as truly epithelial as the epidermis itself, and no one who has had experience with reconstructive surgery can fail to have been made aware of the complete dependability of the epidermal graft. The nail of the thumb of the other hand, to which the new one would be expected to conform, must be the donor, rather than the nail of the great toe, the only other practicable resource. The replacement of one thumb nail by a graft from the other thumb seemed, therefore, to be beyond prospect of misadventure, and the procedure was carried out in that belief, which was completely justified by the result. There was, nevertheless, a moment of dramatic interest when, on removal of the bandages, inspection disclosed that healthy growth was proceeding on both nails. Thus there was once more triumphantly vindicated the dependability of grafts whose dependence is on the nourishment of living epithelial cells by the lymph fluid present in the tissues of the base, the exceptional feature in this case being the relatively exaggerated thickness of the nail substance as compared with the horny layer of the skin epidermis.

INCIDENCE OF HEART DISEASE IN SCHOOL CHILDREN

Examination of the hearts of 10,333 children in ten public schools with an aggregate enrollment of 11,578 pupils by Javob M. Cahan, Philadelphia (*Journal A. M. A.*, May 11, 1929), showed a general incidence of organic heart disease of 0.91 per cent. The younger children had a slightly lower incidence of heart disease than the older pupils, and the boys were similarly favored over the girls. Valvular disease, mitral stenosis, was the most frequent lesion found. This anatomic diagnosis was made in fifty-three of the ninety-four children with heart disease. Fourteen of these fifty-three showed signs of mitral stenosis and mitral insufficiency. Consideration was given to three additional factors bearing on the prevalence of heart disease in school children; namely, (1) children with grave heart lesions, unable to attend any school; (2) children with crippled hearts attending special classes, and (3) children with definite or suspicious heart lesions that are being overlooked because of the inadequate routine examination of the clothed chest. Baring of the pupil's chest would introduce the atmosphere of a physician's private office or that of a hospital into the school clinic. The school physician would then make a more comprehensive examination, improve the diagnostic service in general, and overlook fewer heart conditions. Of course, he would continue to abstain from any therapy. Since we are usually creatures of habit, such examinations at definite intervals might lead one to acquire the custom of having periodic health examinations for the rest of one's life.

A Scot and his wife went into a restaurant and ordered one sandwich and two plates, cutting the sandwich in half as it was served. He was chewing away ravenously, while his wife looked on, which led the waiter to ask: "Is there something wrong with the sandwich, madam?"

"Na," she no'ed, "but Sandy is using the teeth."—*Kalends.*

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TRAUMATIC BRAIN EDEMA AND ENCEPHALITIS*

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Head injuries have increased in recent years, due largely to the increased number of automobile accidents. Every physician may be called upon to care for these cases and should be competent to diagnose and properly treat the condition present. The degree of injury will vary from a slight concussion to severe cerebral damage and involves interpretation of neurological signs which may be most significant in the saving of life or in the prevention of disagreeable post-traumatic symptoms. This paper is intended to present some of these important diagnostic signs, and particularly to emphasize traumatic cerebral edema and encephalitis.

I assume that every physician is familiar with the classical syndrome of middle meningeal hemorrhage, and shall not devote much time to its discussion. The temporal injury, the lucid interval, followed by restlessness, rising pulse pressure, slow pulse, contralateral face and arm weakness, increasing stupor and finally coma and medullary failure from intracranial pressure, are typical. I would emphasize, however, the necessity of competent hourly observation to detect the early pressure and localizing symptoms and not to wait until coma has supervened before operative interference is recommended. At this late stage, signs of medullary failure are beginning to appear and the patient probably will die even though the pressure is relieved. The following two cases will illustrate the dangers of delay.

Case No. 1.—G. E. a boy 17 years of age received a right fronto-temporal and a left occipital injury in an automobile accident at 7:00 p. m. Sept. 24, 1928. He was unconscious about fifteen minutes and entered the hospital one half hour after the injury. He recognized his father but had irrational periods. At 8 p. m. his pulse was 72, at 9 p. m. 56 and at 10:30 p. m. 50 per minute. He had become quieter. At 11:30 p. m. his pulse had dropped to 44, blood pressure 132/68 and he was stuporous and involuntary. At 2 a. m. his temperature began to rise, 101°, pulse 48, respirations 20. At 3 a. m. he was comatose, was perspiring profusely, had mucus accumulation in his respiratory passages, and had muscular twitching. At 5 a. m. his blood pressure was 165/0, he was cyanotic and his lungs were rapidly filling with fluid. Surgical consultation was called at 6 a. m., he was seen at 7 a. m. and died at 7:50 a. m. of medullary failure from intracranial pressure. The x-rays showed a fracture of the skull in the right temple and there were local neurological signs pointing to involvement of the right motor cortex. Postmortem examination revealed a large epidural hematoma in the right frontal region, from rupture of the middle meningeal artery.

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*Read at meeting of the Missouri Valley Medical Association, Iowa City, September 26, 1929.

The condition was operable and the boy's life probably was lost by the lack of recognition of the pressure signs before medullary failure occurred. These signs developed during the night and were not reported to the attending physician until it was too late to operate.

Case No. 2.—J. Y. was thrown from a horse during the night of Sept. 18, 1926, striking right side of his head, was unconscious several hours and then became conscious. He became unconscious again the following night after a period of increasing restlessness, rising systolic blood pressure, slow pulse and dilated right pupil. He was brought into the hospital on the second day at 3:40 p. m. with left sided paralysis, blood pressure 172/80 and was operated at 5:15 p. m. A large epidural clot was found in the right temple, was removed and the torn middle meningeal artery tied. The tension was relieved and the prognosis seemed good, but he continued in coma, with rising temperature, pulse and respiration and died of medullary collapse at 3:45 a. m. Again, there was too much delay in surgical intervention, so that an acute brain edema and medullary failure followed the release of pressure.

The greater number of patients with head injury do not develop middle meningeal hemorrhage. In fact, its incidence in a large series of cases is surprisingly low, five per cent or less. Much more frequent and important is the direct injury to the brain which results in varying degrees of cerebral edema or laceration. The swelling of the brain may be either local or general and may give rise to alarming pressure symptoms. Likewise the cortical damage may be either local or general and may seriously interfere with brain function.

The simplest brain injury, without demonstrable pathology or after effects, is called concussion. This diagnosis frequently is applied to much more serious conditions, which would be evident if the traumatized brain could be examined. The commonest pathology in concussion probably is a local cortical bruise resulting in local swelling or edema, with local punctate hemorrhages in the cortex and a slight blood staining of the pia-arachnoid. This is comparable to a bruise of the soft tissues elsewhere in the body. In the cortex, however, it has greater significance, for there is no regeneration of nerve cells destroyed and the resultant scar or gliosis may irritate by contraction and initiate epileptic attacks if it involves the motor cortex. Also adhesions in the meninges over this area may give rise to localized pain, so commonly complained of after head injury.

The swelling of the brain may be more than local in character, due either to circulatory or chemical disturbance. Cannon(1), some years ago, offered an experimental interpretation of this phenomenon, which occurs so commonly after head injury. The essentially closed cavity of the cranium in which the brain is placed is an important factor. A rather slight increase in brain volume from edema will increase intracranial pressure and interfere with the circulation of both the blood and the cerebrospinal fluid. Symptoms of low grade pressure from edema usually appear on the second to fourth day after injury and are detected by the increased irritability and restlessness, headache, photophobia and slow pulse. These symptoms should be recognized and treated by dehydration, either active magnesium sulphate catharsis or intravenous injection of hypertonic solutions. The latter is preferable if the patient is stuporous or vomiting, although the magnesium sulphate can be given per rectum, five ounces of a saturated solution, injected high, at body temperature, with the patient lying on his left side and hips elevated, to favor retention as long as possible. The most physiological hypertonic solution for intravenous injection is glucose, chemically pure and buffered. Such a solution can be obtained from drug houses, in 100 cc. ampoules of 50% strength. The intravenous dose for an adult is 100 cc. Toxic reactions, evidenced by a chill and temperature, usually are avoided by use of the buffered solution, although a patient with disturbed medullary centers may develop a reaction in spite of this precaution. This should be given once or twice to reduce pressure symptoms. If this fails, which is unusual, a subtemporal decompression is needed. Spinal punctures do not relieve brain edema since the ventricles and subarachnoid spaces are compressed by the swollen brain and there is little fluid to drain off. The failure to relieve traumatic brain edema by dehydration prolongs the symptoms and favors the development of chronic post-traumatic headache. The following case histories will illustrate the symptoms and treatment of brain edema.

Case No. 3.—W. W., University Hospital No. 27767, was a man 47 years of age who was thrown from a truck Feb. 18, 1928, and received a blow on the back of his head. He was unconscious for a short time. On the second and third days following the injury, he developed increasing occipital and frontal headache, drowsiness and difficulty in walking. He entered the hospital February 23rd, five days after the injury, in this condition. His pulse ranged in the 60's most of the time, blood pressure 120/64, the optic discs showed some blurring and congestion but no distinct elevation. Neurological examination was negative except for slightly hyperactive tendon reflexes and sluggish abdominal and cremaster reflexes. There were no local signs. X-ray showed a linear fracture in the left occipital region. A spinal puncture revealed a pressure of 14 millimeters of mercury, which was reduced to 2 millimeters by withdrawal of 5 cc. of a slightly straw colored fluid. There was no relief from the puncture. Active magnesium sulphate catharsis was tried with no improvement. Another spinal puncture, on the second day, with drainage of 20 cc. of fluid, reducing the pressure from 18 millimeters to 2 millimeters of mercury, gave very slight and temporary relief from the severe headache. On the evening of February 25th, 350 cc. of 20% glucose were given intravenously and relief from the headache was experienced before the completion of the injection. The patient's mental reaction became alert and the following morning he said that he felt well. The symptoms did not recur.

This case probably was a combination of basilar hemorrhage and brain edema, judged from the xanthochromic fluid and the pressure symptoms which were not relieved by spinal drainage. The prompt relief given by intravenous injection of hypertonic glucose solution shows the effectiveness of this treatment in brain edema.

Case No. 4—R. G., a 16 year old boy, was struck on the left temple and occiput, was knocked unconscious, but responded to questions shortly after the accident. There was no paralysis immediately after the injury. The x-ray showed a small fracture in the occipital region but none in either temple. Spinal punctures revealed a blood-stained fluid. Dehydration therapy was instituted but on the second day the patient developed increased restlessness, stupor and a paralysis of the left side of his body. His pulse was 68, systolic blood pressure 130, diastolic 60. Intracranial pressure quite evidently was increasing and involved the right motor cortex. Although these symptoms developed rather late for middle meningeal hemorrhage and were localized on the side of the brain opposite the injury, it was decided to trephine on the right side for possible hemorrhage. No sign of hemorrhage was found, but the brain was clearly edematous and under considerable pressure. No fluid could be obtained from the lateral ventricle. The trephine opening was enlarged beneath the temporal muscle and the dura opened in stellate manner for a subtemporal decompression. Immediately following the operation there was improvement in movement of the left side, and a gradual recovery from the signs of brain edema and paralysis.

I believe the decompression in this case was definitely indicated and resulted in a much quicker and more complete recovery than if it had not been done. In fact, at the time of operation, the symptoms were getting progressively worse and the prognosis did not seem very good. It is in such cases that the present day conservative trend towards non-operative treatment of head injuries may do harm, either in failure to recognize and treat brain edema by dehydration, or in omission of a decompression when really needed.

A condition very similar to acute brain edema is the development of low grade intracranial pressure symptoms two or three weeks after a head injury. The usual complaint is pain in the eyes, frontal headaches and sometimes dizziness. Measurement of the cerebrospinal fluid pressure at this time often will show a surprising elevation to twenty or thirty millimeters of mercury, normal being under ten millimeters. The fluid may have a yellow tinge and increased protein content. The term brain edema would hardly apply to this late condition, since it more properly would be present during the acute stage of the brain injury. It is more likely due to hemorrhage into the cerebrospinal fluid at the time of injury and resultant interference with absorption of cerebrospinal fluid, due either to a blocking of the arachnoid filters through which the fluid must pass to enter the venous sinuses, or to obliteration of the subarachnoid spaces over the cerebrum from the early brain edema. This late low grade pressure usually is relieved by a few spinal punctures, with fluid drainage each time to normal pressure. If early hemorrhage into the cerebrospinal fluid is the cause of this condition it would seem to be good therapy to drain off this blood earlier, on the second or third day following injury. Although there is some danger in spinal puncture in conditions of intracranial pressure, either from the sudden reduction of pressure, or from herniation of the cerebellum into the foramen magnum, I believe less total harm will be done by carefully performed diagnostic and therapeutic spinal punctures in head injuries, than to allow low grade pressure symptoms to continue too long a time without diagnosis and therapeutic spinal drainage.

The preceding discussion has emphasized the value of dehydration therapy in acute cerebral edema, and of spinal drainage in later low grade intracranial pressure following head injury. Probably most of the disagreeable chronic post-traumatic headache and dizziness can be prevented by proper early treatment. If not, there is now a method of giving relief to a considerable number of these chronic cases, by the intraspinal replacement of cerebrospinal fluid with air. The value of this procedure was first brought to attention by Penfield(2) and has since been confirmed by others. By this method 50 to 100 cc. of cerebrospinal fluid are withdrawn in ten cc. amounts, or continuously by special apparatus, and replaced by a slightly less quantity of air. This air passes up into the subarachnoid spaces over the cerebrum and into the ventricles, thus giving excellent diagnostic encephalograms by x-ray. The air gives rise to an immediate reaction of headache and vomiting, but gives complete relief from the chronic headache and dizziness in 60% to 70% of the cases. It has no permanent bad effects. It is possible that the mechanism of this treatment is a reopening of subarachnoid spaces or breaking of adhesions by expansion of the air as it becomes heated in contact with the tissues.

The term traumatic encephalitis has recently been applied to a condition of rather wide-spread punctate hemorrhages in the white substance and central nuclei of the brain, chiefly of the cerebrum, following head injury. This subject has been discussed by Martland(3), under the title of "Punch Drunk", the condition of ataxia, tremor and mental deterioration frequently seen in prize fighters who have received repeated severe concussions through knock-outs. This clinical syndrome is similar to certain forms of infectious encephalitis and, although there is as yet little pathological evidence, it is believed that it is due to gliosis from multiple small central hemorrhages. The acute pathological condition was first described by Cassasa(4) and was later discussed in its relation to post-concussion neurosis by Osnato and Giliberti(5). The latter concluded "that our conception of concussion of the brain must be modified; that it is no longer possible to say that concussion is an essentially transient state which does not comprise any evidence of cerebral injury; that not only is there actual cerebral injury in cases of concussion, but in a few instances complete resolution does not occur; and that there is a strong likelihood that secondary degenerative changes develop. When this happens we have a condition which clinically, at least, resembles some of the reactions seen in encephalitis. We feel therefore that the post-concussion neuroses should properly be called cases of traumatic encephalitis." The clinical symptoms of the few cases of traumatic encephalitis which have died during the acute hemorrhagic stage and come to post-mortem examination are typified by the following case report.

Case No. 5—University of Nebraska Hospital, No. 15616, 1925, was a woman 46 years of age, with a previous history of hysteria and obscure asthmatic attacks. She was struck by an automobile, thrown to the pavement, and was brought immediately to the hospital in a semi-conscious condition, moaning and cyanotic. Examination disclosed a Colles fracture of the left wrist, a soft-tissue bruise of the back, but no external evidence of head injury. The rectal temperature was 101°, pulse 108 and respirations 24, rather labored and irregular, systolic blood pressure 114, diastolic 40. She was rather restless, and continued to be cyanotic and semi-conscious. On the second day the temperature, pulse and respirations began to rise and she died of medullary failure about 48 hours after admission. Post-mortem examination revealed no evidence of injury other than the fractured left wrist and the bruise on the back. The head showed no scalp injury, no cranial fracture and no evidence of local injury to the brain. However, sections of the brain revealed the entire white substance dotted with punctate hemorrhages, one or two millimeters in diameter. (Fig. 1) Microscopically these were perivascular in location. These wide-spread vascular lesions were interpreted as the cause of the unconsciousness and death, although their origin was not satisfactorily explained. No fat emboli were found in the vessels of lungs or brain.

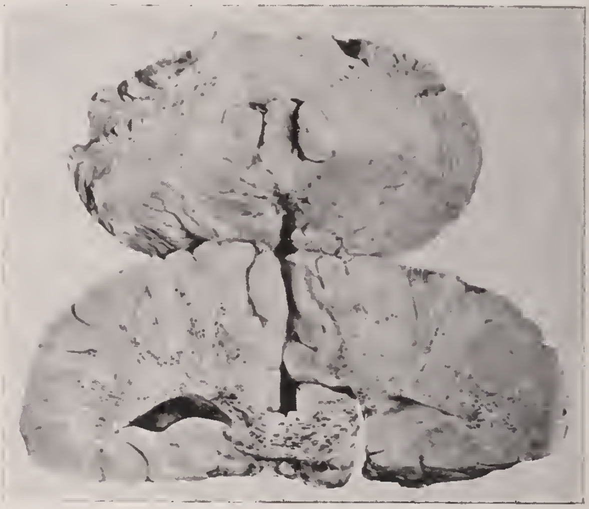

Fig. 1. Case 5—Photograph of cut surface of brain showing punctate hemorrhages in white substance, hemorrhagic encephalitis of traumatic origin.

The similarity of this pathology to that of hemorrhagic encephalitis of infectious origin is illustrated by a specimen of the brain of a child who developed a similar comatose condition following a respiratory infection. The massing of small hemorrhages in the white substance, particularly the corpus callosum, and the freedom of the gray cortex from hemorrhage is striking. (Fig. 2) Central hemorrhages of this type also are produced by fat embolism after injury to long bones, and a case of this character is presented:

Case No. 6—University of Nebraska Hospital, No. 82664, 1922, was a young man, 24 years of age, who had both bones of both lower legs broken by a car which ran into the back end of a truck on which he was riding. There was no head injury. Temporary splints were applied and x-rays taken. There was a low grade temperature from the time of admission. On the second day gas anesthesia was given and plaster casts were applied, with as little manipulation as possible on account of the temperature of 102°. The patient did not become conscious after the anesthetic. His temperature, pulse and respiration rose gradually and he died two days later with evident central cerebral disturbance and medullary failure. Post mortem examination of the brain disclosed many punctate hemorrhages throughout the white substance, which microscopically were perivascular in location.

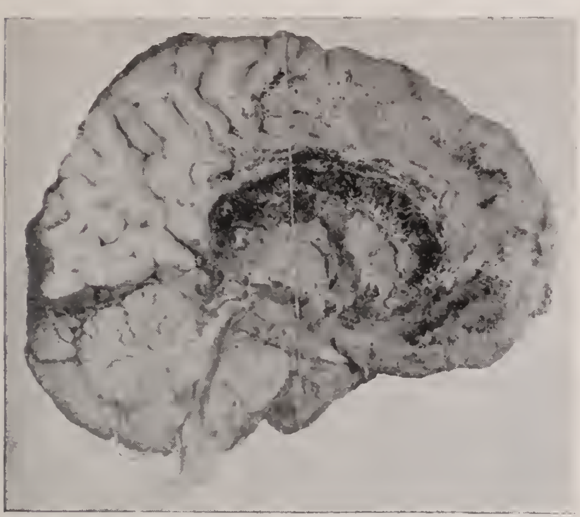

Fig. 2. Photograph of mesial section of brain of a case of acute hemorrhagic encephalitis of infectious origin.

Fat emboli were demonstrated in these vessels and also in remarkable manner in the vessels of the lungs and other organs.

These three cases of central punctate hemorrhages emphasize that similar cerebral pathology may be produced by different causes. The two injury cases, however, illustrate the difficulty of interpretation of the underlying cerebral pathology in coma following injury. When this condition is considered in conjunction with cerebral edema, it emphasizes the necessity of careful study and interpretation of neurological signs in all cases of head injury, for the most effective treatment and prognosis.

SUMMARY

1. Competent hourly observation is necessary in head injuries during the first 24 hours, to detect pressure signs before medullary failure begins.

2. Acute brain edema should be actively treated by dehydration until pressure symptoms are relieved. Rarely subtemporal decompression is necessary.

3. Late low grade pressure symptoms should be treated by spinal drainage.

4. Chronic post-traumatic headache can be relieved in a considerable percentage of cases by spinal air injection.

5. Multiple punctate hemorrhages in the white substance of the brain give rise to obscure encephalitic syndromes.

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CASE STUDIES IN GOITRE NO. II*

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CYSTIC GOITRE

In cystic goitre there is present an asymmetrical enlargement of the thyroid, usually of considerable size, and of fairly rapid onset in early adult life—the early twenties to the middle thirties. It is rather characteristic of this type of goitre that irrespective of the size of the gland and of its microscopical appearance, clinically there are few, if any, symptoms of toxicity or hyperthyroidism until it has been present many years, consequently the patient seeks relief either for cosmetic reasons or for pressure symptoms such as dyspnoea, husky voice, or more rarely difficulty in swallowing.

The absence of toxic symptoms in these patients, even though histologically the glands may show microscopic evidence of either adenomatous or hyperplastic changes which usually are accompanied by clinical hyperthyroidism, may possibly be explained by the fact that in all cases there is also evidence of marked and rapid degeneration giving rise to the cysts. The degeneration may be due to hemorrhage in an adenoma or simple granular degeneration of the cytoplasm of the cells of the gland with destruction of the alveoli and liquefaction of the degenerated material. Subsequently there may be increased connective tissue formation and deposition of lime salts causing calcareous nodules or even calcification of almost the entire capsule of one of the cysts. The process is frequently a continuous one—cyst after cyst being formed.

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*From the Department of Surgery, University of Nebraska, College of Medicine.

In early stages the cyst grows outward making a striking deformity and asymmetry of the neck and pressure symptoms develop slowly except in cases of severe hemorrhage into the cyst when there may occur a sudden compression of the trachea especially in a low lying cyst with alarming symptoms of dyspnoea which may result in death. Erosion of the cartilaginous rings of the trachea may ensue from long continued pressure and result in sudden collapse of the trachea after the thyroid has been removed at operation.

This type of goitre is affected little, if at all, by iodine, thyroid extract, or radio-active therapy. Aspiration of the cysts with subsequent injection of irritating substances to destroy the lining membrane has been tried but aside from the fact that it is not frequently successful there is the danger of striking one of the large blood vessels and causing serious hemorrhage with attendant symptoms of increased pressure.

The diagnosis, bearing these facts in mind, appears to be simple but practically it is not so easy as it seems. It is extremely difficult to tell the difference between a solid adenoma and a cyst because of the tenseness of the latter. The following case will illustrate.

Case No. 30173. M. T., female, aged 30, married, was admitted to the surgical service of the University Hospital, November 6, 1929. The diagnosis made by her family physician was goitre. The diagnosis of the admitting physician after a rather rapid and cursory examination was exophthalmic goitre.

The patient's chief complaints were: (1) Swelling ing in the neck, (2) Nervousness, (3) Sense of pressure in the neck.

Onset and development. The patient states that her neck has been large since she was thirteen years old. During the past two years the neck has grown larger and she has noticed she is more nervous than formerly. This she describes as being more a nervous feeling than an actual tremor though at times a tremor appears. She has been told at various times that her eyes seem to be a little more prominent although she herself has not noticed it.. There is no palpitation of the heart or dyspnoea. She has no difficulty climbing stairs. She has not noticed an increase in appetite and eats now about the same quantity as a year or so ago. There has been a gradual loss of weight from 130 pounds to 116 pounds during the past year (due to dieting and hard work). She was seen by her doctor who advised having the goitre taken care of before it did her harm. Her neck becomes larger at the menstrual period. The family and previous history have no bearing on the present condition except possibly that she is a member of a family of eight children with father and mother living and no other cases of goitre in the family.

The physical examination shows a small woman about thirty years of age, rather thin; the predominant feature is a gross enlargement of her neck. Is up and about the ward, and seems to be fairly comfortable.

Local. The thyroid gland has a left lobe uniformly enlarged, oval in shape about 10 cm. in length and about 6 cm. in width. It protrudes upward from the skin surface about 4 cm. It is rather retort shaped at the base, the neck of the retort being made up of the isthmus. On palpation this mass has a plastic feel with no nodules. The mass is not fixed to any underlying surfaces—is freely movable. The right lobe is palpable but evidently not enlarged. Her eyes do not protrude nor is Stellwag's sign present. She has no evident tremor and her pulse is slow, full, and regular. Finally her basal metabolic rate is within the upper limits of normal. The remainder of the physical examination is negative. The house surgeon makes a note that his impression is that it is a colloid goitre. My own impression, based on the asymmetry and the fact that I was unable to elicit fluctuation, was non-toxic adenoma.

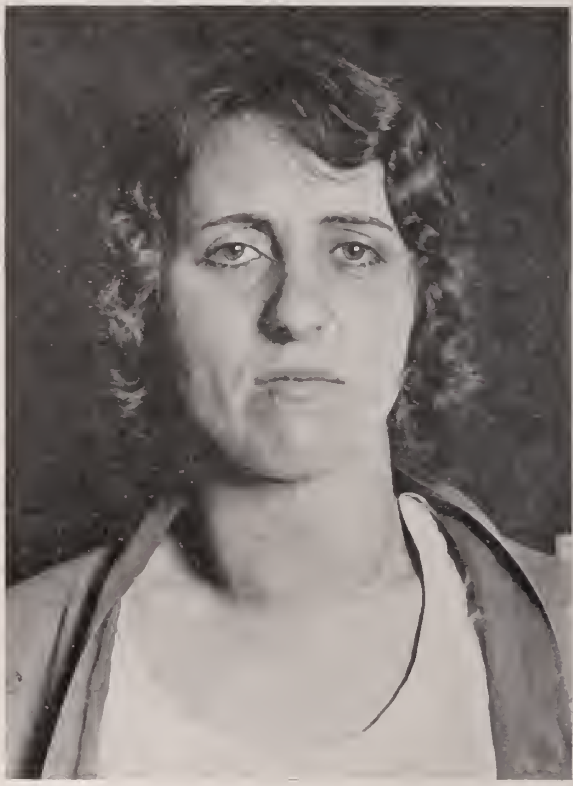
Fig. I. Case 30173. Cystic Goitre. Note the asymmetry of the growth and the change in contour of the neck on the left side.

The laboratory findings bore out the clinical findings of lack of toxicity except for the slight relative lymphocytosis in the differential count. The urine was light amber, specific gravity 1.018, acid, albumen 0, glucose 0 with a few epithelial cells microscopically. Blood. Red blood count 5.160,000. Hemoglobin 80% color index —1. White blood count 8,600, Polys 55%. Lymphos 45%. The Wassermann reaction was negative. A Rehfuss test meal showed free HCl. 14, 0, 0, 0, 4, 8, 35. A basal metabolic test taken the day after admission showed +20%, +14% and +10%. It was not quite satisfactory and on repeating the next day was +6% and +1%. Her weight was 116 pounds.

A subtotal thyroidectomy was performed, without incident, on November 11, 1929, under paravertebral anaesthesia and a large asymmetrical thyroid removed leaving about one-twelfth of the amount of a normal gland attached to the upper pole and posterior capsule of either side. The blood pressure was 150/90 and the pulse which was checked every five minutes was regular throughout with gradually increasing volume and falling frequency, dropping from 160 per minute at the conclusion of the local induction to 128 at the end of the operation. A gauze wick to the stump of the gland was placed in either angle of the wound.

Grossly there was a large cyst in the upper portion of the left lobe of the gland and the isthmus felt a little harder than normal.

The pathological report was as follows:

"Gross. The material consisted of three lobes of thyroid gland. The left lobe measure 5x7 cm. and was oval in shape. The right and middle lobes were moderately enlarged. On cutting into the left and middle lobes there rushed out a material laden with colloid.

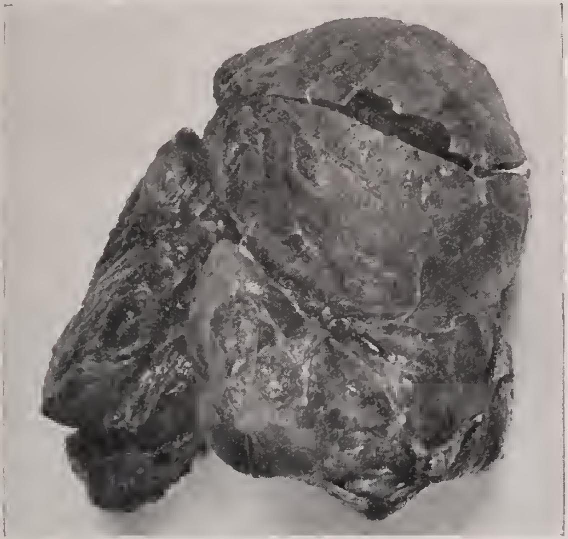

Fig. II. Case 30173. Cystic Goitre. Gland removed at operation. Note the replacement of the upper portion of the left lobe by a large cyst.

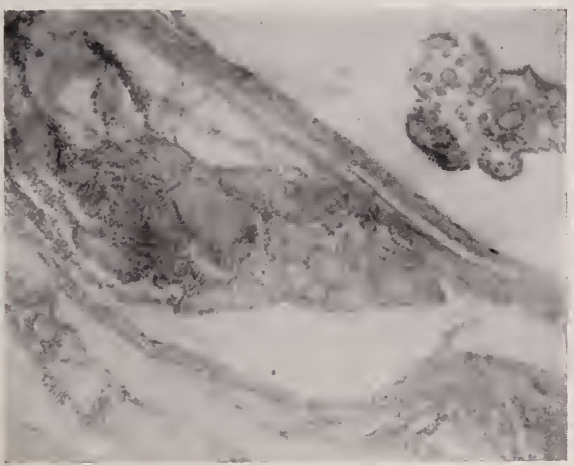

Fig. III. Case 30173. Cystic goitre (low power photomicrograph). Note the marked difference in size of alveoli, the increase in the lymphoid elements in the interstitial tissue, and the marked evidence of degeneration of both alveolar constituents and stroma.

"Microscopic: Two sections from different portions of the thyroid showed essentially the same changes. Many of the alveoli showed a tremendous degree of cystic dilatation. In the cysts there were long projecting papillae, frequently covered with columnar epithelium. The connective tissue matrix of these papillae was of mucoid character. Along with these changes there were numerous alveoli of smaller than normal size. Many small tubules were embedded in the mucoid stroma.

"Diagnosis. Adenoma of thyroid, apparently of exophthalmic type". (Signed) Eggers.

The postoperative convalescence was uneventful. The patient was discharged from the hospital on November 20, 1929, the ninth postoperative day after a total hospitalization of fourteen days. A follow up note from her family physician states: "Patient is doing fine. Gaining weight and feels much improved. Local examination very good." (Signed) V. V. Vance.

Summary: The above case illustrates clearly the difficulty of making an accurate pathological diagnosis in a given thyroid case, and the futility of trying by type names to convey an idea of the condition of the patient. The term exophthalmic goitre conveys to the mind's eye of the medical man a picture of a patient acutely sick with toxic symptoms and in a more or less serious condition. Yet this gland when removed was pronounced by the department of pathology to be of the exophthalmic type while clinically there were no toxic symptoms and the laboratory examination revealed none except a mild relative lymphocytosis. There is a great probability that toxic symptoms would have arisen later and this fact, as well as the pressure symptoms present, and the danger of these increasing, either gradually with the growth of the gland or suddenly from hemorrhage within the cyst, constituted a sufficient indication for removal of the gland, at the same time assuring the patient that this could be done with minimum risk and complete restoration to economic efficiency. In spite of the differences of opinion as to pathological diagnosis all of the clinicians were agreed on the most important diagnosis to make in thyroid disease. That is that this gland was non-toxic and the prognosis was good.

PROGRESS IN PREVENTION OF DEAFNESS

Horace Newhart, Minneapolis (*Journal A. M. A.*, Oct. 12, 1929), concludes that the periodic testing of the hearing acuity of school children with the audiometer, by revealing the early loss of hearing, is at the present time the most effective means of initiating measures for the prevention of deafness and the conservation of hearing among school children. The greatest need of the movement, now well under way, is the interest, active cooperation and leadership of the physician, especially the otolaryngologist. The movement would be greatly expedited by the inauguration of a well directed campaign of publicity calling attention to the value of periodic hearing tests and to the possibilities of the prevention of deafness.

MASSIVE COLLAPSE OF THE LUNG*

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I wish to direct your attention for a few minutes to a pulmonary condition which occurs not uncommonly as a post-operative complication, of which an accurate diagnosis is frequently not made. No new facts will be presented, nor shall I attempt to give you an exhaustive survey of the writings on the subject. If any of you are interested in pursuing the subject more deeply you will find an extensive treatise with a complete bibliography by David R. Bowen of Philadelphia in Volume XXI, page 101, of *The American Journal of Roentgenology and Radium Therapy*.

Acute massive collapse of the lung is a clinical entity characterized by atelectasis of a portion or all of one or both lungs, usually associated with dyspnea, thick sputum, fever, and displacement of the mediastinal structures toward the affected side. It is now generally accepted that it is produced by obstruction of a bronchus or one of its branches; the air retained in the lung substance supplied by the occluded bronchus is absorbed by the blood.

HISTORY

The observation of atelectasis in the lungs of new-born infants was recorded by Eberhard in 1817 and in 1830 Alderson described a partial collapse seen in whooping cough. Gairdner, in 1850, first described lung collapse associated with bronchial occlusion. In 1910 Dr. William Pasteur gave us the first conception of post-operative massive collapse and recorded for the first time the sign of cardiac displacement. In more recent years the condition has been emphasized by many observers, and the term massive collapse has come to be commonly accepted although atelectasis still occasionally appears.

Obstruction of a bronchus producing collapse of the supplied lung may be caused by an inspired foreign body or by mucous secretion. massive collapse is applied only when the obstruction is caused by mucous secretion. This may occur in a variety of conditions, notably in tuberculosis and in bronchitis. We shall consider only the type which occurs as a post-operative complication, but the diagnosis is the same in any type. Three factors seem to contribute to the collapse occurring after operation, a pre-existing bronchitis, inability to cough and expectorate adequately, and inability to breathe deeply.

SYMPTOMATOLOGY

The chief symptoms are as follows: (1) An initial rise of temperature to 102 or 103 degrees. (2) Marked dyspnea. (3) Pain or tightness in the chest. (4) Profuse perspiration. (5) Cough with gradually increasing amounts of thick sputum. The pain and dyspnea are apt to come on rather suddenly and subside slowly. The symptoms usually appear in the first three days after operation but may be delayed a week or ten days.

PHYSICAL SIGNS

Inspection is important. The patient lies on his back or on the affected side, with the affected shoulder drawn down. Respiration is rapid and labored, the skin is moist and there is a varying degree of cyanosis. The expression is anxious and the pulse rapid and bounding. The chest on the affected side is contracted and there may be visible retraction of the interspaces. The respiratory excursion is almost entirely absent on the affected side, the diaphragm is high and its excursion limited. Tactile fremitus is reduced over the affected area. The percussion note may be flat or dull. In complete collapse the breath sounds are absent; if they are heard rales may be abundant. There is a corresponding increase in resonance and breath sounds on the unaffected side. The most important finding is the displacement of the heart and mediastinum toward the affected side. X-ray shows the displacement of the heart and a marked increase in density of the affected lung. Bowen ascribes this density to engorgement by blood due to the negative pressure outside the blood vessels.

PROGNOSIS

The prognosis depends on the virulence of the organisms which happen to exist in the collapsed area. In the absence of infection or serious debility of the patient the prognosis is good.

TREATMENT

Prophylaxis is important. Since massive collapse usually occurs in patients with bronchitis, the most effective control should be the avoidance of operations on such patients as far as possible. Change of posture, the upright position and carbon dioxide inhalations have been suggested as prophylactic procedures. When collapse has occurred treatment must usually be expectant. Puncture of the chest wall for any purpose is useless and probably dangerous, and is to be avoided. Saute has advocated the rolling of the patient on the unaffected side, a safe procedure which has apparently met with success in some cases. Bronchoscopy with aspiration of the mucous has yielded excellent results and is an advance in the right direction. However, most cases are cured spontaneously and unless the patient's condition is unusually grave, expectant treatment is the procedure of choice, if the method of Saute fails. Bronchoscopy with aspiration should be borne in mind as helpful in any case which does not seem to be progressing favorably.

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*Read before the Staff of the Lincoln General Hospital, Sept. 23, 1929.

CASE REPORT

Lincoln General Hospital, Case No. 11241. A single, white, American, male, baker of twenty-one entered the hospital August 9, 1929, complaining of pain in the abdomen. His family history was unimportant and there had been no serious illnesses. He had measles and mumps in childhood, and complained of a mild sore throat which lasted all winter. He also admitted some chronic cough which had never concerned him, though he raised some sputum. About six weeks before admission there was an attack of pain in the right lower quadrant without nausea or vomiting persisting a few days. Five days before admission he had a similar attack of pain which became severe enough to confine him to bed, and was accompanied by some anorexia but no nausea or vomiting.

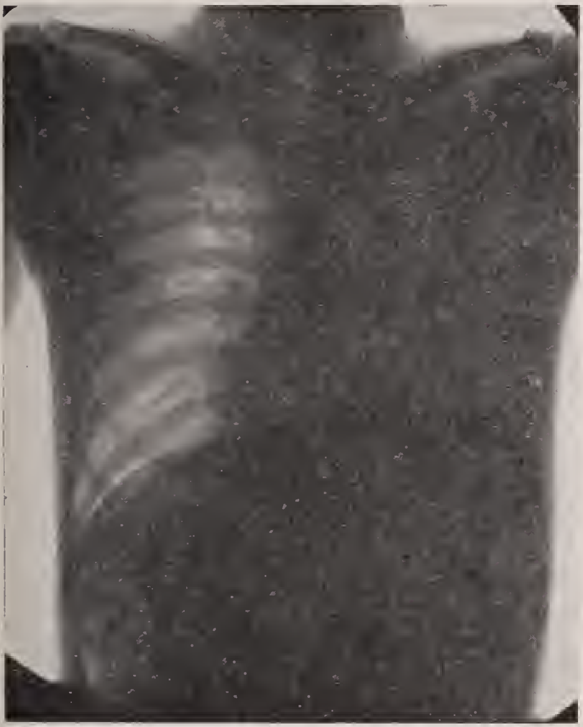

Fig. I. Twelve hours after onset of acute symptoms showing opacity of right lung with displacement of heart and mediastinum toward the right.

Physical examination showed a well-nourished young man. The head, eyes, nose and throat showed nothing abnormal. The chest was well developed, the lungs clear. The heart was not enlarged and no murmurs were to be heard. Blood pressure 120/70. Temperature 98 degrees. Pulse 64. Respiration 18. The abdomen was normal except for slight right rectus spasm and well localized tenderness near McBurney's point. Wbc. 11,600. Urine negative.

A diagnosis of subacute appendicitis was made and the following morning appendectomy was performed under ethylene-oxygen anaesthesia. The appendix showed subacute inflammation, was edematous at the tip and contained a fecoleth. The operation was uneventful and short, and he took the anaesthesia exceedingly well.

On the morning after operation he complained of hoarseness and in the afternoon of pain in the chest and some cough. That evening, 36 hrs. after operation, his temperature rose sharply to 103.2 degrees. His respirations were rapid, his pulse was 120 per min., the lips and finger nails were cyanotic and he was perspiring profusely. He was lying on his right side and seemed in great distress. The right side of the chest was dull, there was no respiratory excursion on that side and the breath sounds were absent. The mediastinum seemed by percussion to be displaced to the right and the cardiac impulse could be seen to the right of the sternum. X-ray examination forty-eight hours after the operation showed a dense shadow replacing the right lung with marked displacement of the heart to the right. The white count was 17,550 and the temperature had fallen to 100 degrees, though the pulse remained rapid and the perspiration and distress continued. By evening of the third day breath sounds could be heard in the axillary line and he was raising some thick green sputum. On the fourth day he had a coughing spell, became very short of breath and raised a large quantity of very tenacious green sputum.

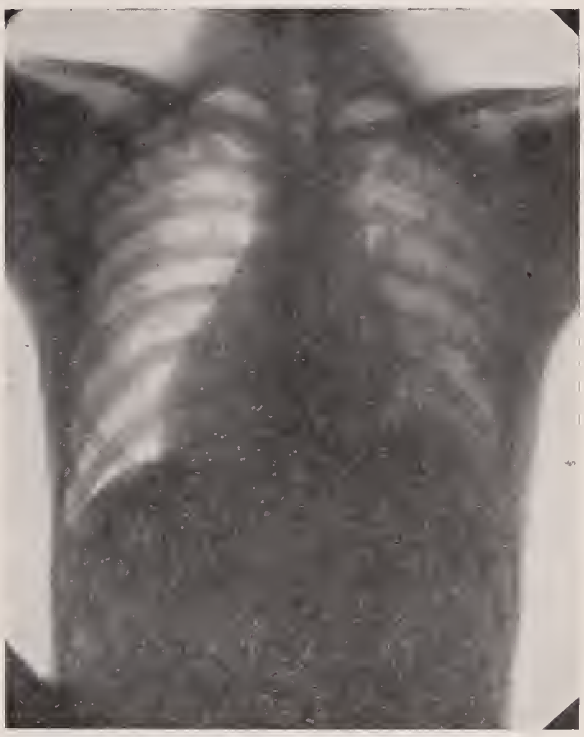

Fig. II. One week after the first showing almost complete recovery of the affected lung.

The breath sounds, accompanied by coarse rales, became more distinct each day, the temperature fluctuated from normal to 101 degrees until the sixth day when the fever rapidly subsided, the respiratory excursions in the right chest increased and the sputum became thinner. X-ray examination, repeated one week after the first, showed the shadow to have almost completely disappeared and the heart to have returned to its normal position. The wound healed kindly and he was discharged on the eleventh post-operative day with no symptoms except a slight cough. He gained weight and strength rapidly, the cough improved and he returned to work two weeks after discharge. No treatment was employed except the administration of sedatives when the distress was great.

SUMMARY

1. Massive collapse of the lung produced by the occlusion of a bronchus should be considered in every case showing fever with cough or pain in the chest after operation.

2. The chief symptoms are fever, dyspnea, pain in the chest, profuse perspiration, and cough with thick tenacious sputum.

3. The diagnostic signs are, contraction of one side of the chest with limited respiratory movement, dullness or flatness of the affected side with absent or diminished breath sounds, and displacement of the mediastinal structures toward the affected side.

4. The x-ray findings are increased density of the affected lung and displacement of the mediastinal viscera toward that side.

5. The prognosis is usually good.

6. Spontaneous recovery is the rule. The patient may be rolled on the unaffected side or one may resort to bronchoscopic aspiration.

7. A typical case is presented in detail.

THE SINUS PROBLEM*

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Omaha, Nebr.

The recognition by the laity of the existence of nasal sinus disease is evidenced by the number of persons who are aware that their symptoms are due to sinus disease. Nasal and post nasál discharge, head and eye aches, deafness and sore throat all grouped a few years ago by physician and layman alike as chronic catarrh are now spoken of quite generally as sinus trouble. Equally common is the popular prejudice against any form of sinus surgery. While people are aware that their nasal or postnasal catarrh means sinus trouble, they have heard for a long time that no medical treatment either local or general will bring them much relief and that operative interference is a calamity calling for repeated operations resulting in no relief of their symptoms and occasionally in death. When told a sinus or nasal operation is advisable the patient almost invariably states that he has been advised against this course by his friends.

This pessimistic attitude is undoubtedly hampering our effectiveness in dealing with upper respiratory infections. It is partly due to popular knowledge of the symptoms of sinus infection, with at the same time ignorance as to what sinus trouble means in terms of anatomy and physiology. Popular articles, and talks with our patients will supply the elementary knowledge necessary to correct this ignorance. The present popular mental attitude toward sinusitis is a case of too little knowledge being a dangerous thing.

It is true that with that form of suppurative sinusitis which demands repeated operations and very radical measures the patient's pessimistic attitude is almost warranted and it is generally these cases which are used as examples by patients in forming their opinions.

Fortunately the great majority of infections of the upper respiratory tract are non-suppurative and lend themselves well to treatment or surgery; but while we are well aware of this differentiation ourselves, we often fail to explain it to our patients. There seems to be only slight toxic absorption from the sinuses themselves. The infectious material of the sinus, however, drains mainly into the nasopharynx and pharynx which are richly supplied with blood and from which absorption is very rapid. When by oral inspection the pharynx is red and swollen and coated with muco-pus, the source is generally an infected sinus. Not infrequently a chronic sinusitis will give subjectively no nasal or head symptoms and its only evidence symptomatically is where its drainage into the pharynx produces an acute or chronic pharyngitis. I may be pardoned perhaps if I quote from a paper I presented to the Mid-Western Section of the American Tri-Logical Association in Colorado Springs in 1920 as, from a constant study of the opinions of others and observation of my own cases, I have found no reason to change the opinion which I then expressed and which has stood the test of time.

"I have been surprised to find constant evidence of the existence of antrum infection. Almost without exception those cases which I have previously supposed to be ethmoid disease, showed the main infection to be antrum disease. The appearance of the middle fossa with the swollen middle turbinate, mucus and polyps which is usually diagnosed as ethmoiditis I have so frequently found associated with antrum involvement that I think most of the cases of ethmoiditis are dependent on an underlying antrum involvement."

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*Read before Omaha-Douglas County Medical Society, Oct. 22, 1929.

Dr. Fred Stauffer states in a recent article(2): "I do not wish to convey the idea that all chronic suppurative conditions of all the nasal accessory sinuses can be cured by drainage of the antrum—I do want to emphasize that this method is applicable to and will cure a great many cases of chronic suppurative ethmoiditis with polypous formation that cannot be cured without drainage of the maxillary sinus."

This opinion seems from the literature to be becoming more and more prevalent.

Perhaps part of the pessimism of our patients is caused by those who, seeking relief from symptoms which could only come from involvement of a large sinus are subjected to submucous operations for inconsequential deflections of the septum or to exenteration of ethmoid cells often with no relief of their symptoms. They have undergone an operation, minor from the viewpoint of the surgeon but of major magnitude in the patient's mind. If they do not receive relief they form another recruit to the army of mal-contents opposed to nasal surgery. I say this with all humility as I myself have been disappointed in the results of such procedures in my own operative work; at times, perhaps, getting a more theoretical perfect interior to the nose but slight if any relief of the patient's symptoms.

If adequate treatment has shown a non-suppurative condition of the antrum to be chronic and persistent should we refuse to clear up the condition by operation because we cannot demonstrate free pus? The general surgeon is amply justified when he removes an appendix which, while showing signs and symptoms of appendicitis, yet has no abscess or free pus present. His diagnosis has been based on the symptoms of a low grade infection and his procedure is considered, and is, good surgery.

The infective nature of a non-suppurative antrum secretion may be verified by Dr. Baum's method(3). This consists of anesthetizing the gum over the canine fossa and puncturing the antrum wall with a small trocar. Through this trocar a swab can be passed and a culture taken from the antrum, free from any outside contamination. An endoscope can now be passed through the trocar and the antrum walls inspected. In several non-suppurative sinus conditions, I have employed this method of diagnosis and on placing my swabs in brain broth cultures, I found these non-suppurating cases always produced a culture, generally of some form of streptococcus. By this means direct inspection is substituted for the uncertainties of x-ray and the specimen for culture not liable to the contamination possible with puncture and washing. The diagnosis is accurate and certain. When the clinical symptoms are plainly evident I do not now consider it necessary to obtain such verifying information, because this procedure, however edifying to the surgeon, is not without discomfort to the patient. For those who are uncertain of the existence of infection in this class of non-suppurative nasal conditions the use of Dr. Baum's method will be both instructive and convincing.

Some time ago, in order to find how far I was relieving the symptoms of my patients in whom I had diagnosed non-suppurative antrum infection, I wrote a circular letter to several on whom I had operated. I received 27 replies. The letter, with the replies tabulated, is as follows:

Dear Sir: I am interested in knowing the result of the operation I performed on you and would greatly appreciate your answer to the following questions:

1. Do you catch cold as easily as before the operation and if so, does it last as long?
    - No 20
    - Yes 6
    - More 1
2. Have you noticed more energy (pep) since your operation?
    - Yes 22
    - No 5
3. What other symptoms troubled you before the operation?
    - Discharge from nose, headache, etc.
4. Have you been relieved, and is your general health better?
    - Yes 24
    - No 3

Only one patient was dissatisfied with the results he obtained. This was an interesting case of obscure diagnosis. On examination by Dr. Baum's method several white tubercles could be seen in the antrum and though we were never able to demonstrate a tubercle infection while he was under my care, some underling general condition I felt sure was the cause of his afternoon temperature, headaches and underweight.

I did not send this letter out for the purpose of publication nor for statistics. I merely wished to check myself on my results and am inserting it in this paper on account of the bearing it has on the popular statement that a patient is worse after a sinus operation than he was before and that repeated operations were always necessary.

If under proper hygiene and food and adequate local treatment persisted in for a sufficient period, the antrum infection still is affecting the patient's health, there need be no undue delay in resorting to surgical procedures. In my early studies of this condition, I favored a modified conservative Caldwell-Luc operation with a good opening under the inferior turbinate by which the antrum could be inspected and treated. On further experience I have found that most cases of non-suppurative and some cases of suppurative antrum infection can be just as well treated by an intranasal operation under local anesthesia securing a permanent and accessable opening under the inferior turbinate, the so-called "window operation". This operation has the advantage of not appearing such a formidable procedure to the patient.

Unless the opening remains permanent and accessible, I find the condition and symptoms return and the operation is a failure and for this reason I wish to say a few words on technique which would otherwise be outside the scope of this paper. The failure of an intranasal window opening comes mainly from the non-permanency and closure of the window. Often the probe indicates that a large window has been secured, when on careful inspection it is seen that one has only secured a break in the wall with a large swinging flap which on healing will completely close the opening. It is necessary to be sure that the hole in the wall is completely bitten away. Most of the rasps break the wall without removing it and give the feeling of the large aperture when in reality they merely make a flap. Many times the inferior turbinate swells and heals over and occludes the opening. It is better to sacrifice enough of the turbinate to insure a permanent and accessible opening.

I have had many post-operative cases of my own and other operators come complaining of return of their symptoms and in whom I have found a good hole has been made into the antrums but adequate home treatment and care had not been persistently carried out. These cases cleared up easily under irrigation and proper nasal hygiene without further operative interference. Dr. Lillie believes that a so-called water-logged condition of the mucous membranes results from the use of washes. The mucous membrane of the nose is so often swollen, water-logged and the seat of polypoid or mucoid swelling in instances where no operation has been done and where no washes have been used that it is necessary to look for further explanation of this condition. As mucoid swelling over the turbinates and polyp formation usually subside on permanent aeration and drainage of the antrum it is possible that the cause for this condition lies in the infective and irritative discharge from the antrum. My personal experience does not extend to any case of mucoid or polypoid swelling of the mucous membrane which was due to washing. I have seen such cases where the washing was inadequately carried out and heavy secretions remained in the antra. On properly washing out these cavities the swelling subsided. I wonder if Dr. Lillie's success in those cases in which he stopped the irrigations did not result from his skillful treatment in removing the secretions and perhaps from the possibility that the irrigations had been ineffectual in removing the thick irritating secretions. Many patients cannot always be within reach of a skilled rhinologist and it is necessary to instruct them how to clean out their own sinuses during a temporary reinfection. The only method I know by which a patient can remove this occasional thick secretion is by irrigation and under careful instruction this seems to produce very happy results.

Much dissatisfaction, I am sure, comes from the expectation of immediate relief after an operation and the lack of appreciation of the essential chronicity of these cases. After aeration and drainage of these cavities it is somewhat rare to find a prompt return to normal. The improvement increases after weeks, months or even years and it is better to so inform the patient before operation or the credit which belongs to the operation will be given to something inconsequential which has happened in the meantime.

1. In conclusion I think that it is advisable to meet the situation by education of our patients, showing them the nature of their trouble and explaining what they may expect in the way of relief,

2. That in the majority of cases non-suppurative in character, a permanent and accessible opening under the inferior turbinate will assure the patient that his fears of repeated operation will not be realized,

3. That instruction in nasal hygiene is necessary to obtain the best results, and,

4. That explanation should be made that the full benefit of an operation may be delayed for months.

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2. Fred Stauffer—Annals of Otology, Sept., 1926. p. 845, No. 3, Vol. 35.

3. Harry L. Baum—Laryngoscope, Dec., 1921.

THE TREATMENT OF VARICOSITY OF THE LOWER EXTREMITIES

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My purpose in presenting this subject is to stimulate interest in a valuable therapeutic measure—that of injecting sclerosing solutions into varicose veins of the lower extremities for the purpose of bringing about an obliteration.

There is no argument in favor of the radical operative method. It has carried a hazard of one fatal embolism in every two hundred fifty operations as cited by Kilbourne(1). The cosmetic effect is not good. There is more chance of recurrence. There is the necessity of hospitalization with its concurrent expense.

On the other hand the injection method, according to McPheeters(2), has carried a mortality record of only one in every 7,600 cases. There have been fewer relapses, less expense and less suffering.

Different physicians in Europe have been experimenting with the injections of various solutions into the veins since the 19th century. Alcohol, ferric chloride and other irritating solutions were first used in Italy for the purpose of producing coagulation.

In 1904, we find that Tavel of Berne, (combining the conservative method with the surgical), tied off the great saphenous in the thigh and injected a 5% carbolic acid solution into the vein.

In 1912, Professor K. Linser of Tubingen, Germany, discovered by accident, while giving mercury solutions intravenous—that when he used varicose veins, they were often obliterated. When he injected into the normal veins this did not occur. The phenomena was probably due to the fact that the walls of the varicose veins are modified. That is, the three coats are frequently absent and replaced by fibrous tissue which is more susceptible to irritation and injury.

Professor Linser experimented further with a number of solutions and finally settled on a 20% sodium chloride as most suitable. He gave more than 15,000 injections without the accident of embolism.

Considering that safety for the patient relative to thrombus formation is always the main thought in these cases, the record of Professor Linser is remarkable.

The main theoretical hazard to be considered in injecting veins is that of pulmonary embolism.

This danger is remote for two good reasons. First, the artificial thrombus formed has been shown to be tough adherent mass held by capillaries and fibroblasts. This was proven histologically by De Takats(3) and others. The other main reason for safety of the method lies in the fact that the blood current in true varicose veins of the lower extremities flows peripherally or remains stationary. Magnus(4) with the skin microscope and Douthwaite(5) with the hemadromometer proved this fact.

Sicard(6) and Forestier(7) injected iodized oil with the salicylate solution and made observations with the fluoroscope. They, also, found that the blood in true varicosities of the saphenous systems remained stationary or passed peripherally. The solutions did not pass into the deeper net work of veins unless the patient exercised immediately. They concluded that venitis was a different process than phlebitis.

Venitis is localized, generates a very adhesive clot, does not give rise to pain or to general edema of the leg, and leaves an atrophied cord.

In phlebitis there is frequently an extension from the superficial net work to the deep-lying net work. This causes edema of the limb. The clot is often loose and afloat in the blood. There is pain, atrophy does not take place. The vein remains hard and bulky and further attacks of infections are possible.

Phlebitis may give rise to embolism. Venitis has positively no tendency to do so.

The Trendelenberg test should be used in all cases. This will indicate the direction of the blood flow. Further and complete examination of the patient is of great importance. This should include a Wasserman test and leucocyte count. The family history often indicates a familial tendency. Note should be taken of previous attacks of infectious phlebitis. Pregnancy should preclude the method, especially the use of quinine salts. Nephritis of a severe form would obviously contra-indicate this method of treatment. Diabetic cases with varicosity can be treated with the salt solutions, but the sugar solutions should, of course, not be used. *The most important contra-indication is the presence of a phlebitis of an infectious nature.*

Schussler(8) states that he considers 95% of cases of varicosity as suitable for this type of treatment. He says that the condition contra-indicating treatment are phlebitis and nephritis.

De Takats(3) places no age limitation on the method. The oldest person he has treated was seventy-two, the youngest eighteen.

Occasionally, one sees cases with small sections of varicose veins in the leg which give no symptoms of physical distress. Women wish them removed for cosmetic reasons. These cases may be safely treated with solutions in small quantity.

Various sclerosing solutions are in use by different authorities.

Douthwaite(5), with 2,000 successfully treated cases, recommends quinine and urethane. He used 4 grams urethane hydrochloride and 2 grams urethane with 30 cc of distilled water.

Sicard(6) and Forestier(7) of France have been using sodium salicylate solutions ranging from 10 to 40%. Forestier(7) alone has given more than 5,000 injections with this solution with no accident of consequence. There is an objection to the use of sodium salicylate, in that cramps just after injection are more noticeable. Also in the event of perivenous escape, necrosis is apt to occur.

It is reported that 30 or 40 thousand cases have been treated in the Necker Hospital in Paris with good results and no embolism.

De Takats(3) recommends 50% glucose. Some argue against its use because it is necessary to use a needle of large caliber which may allow some perivenous leakage. Calorose or invert sugar are more convenient because they are thinner in consistency.

Schussler(8) used metaphen (a modified mercury solution) and 50% sodium salicylate in the more extreme cases.

The most satisfactory solution, however, seems to be the 20% sodium chloride as originally recommended by Professor Linser, and lately emphasized by McPheeters(9).

My own experience has been with 20% sodium chloride in cases with marked varicosity, and the quinine and urethane in small varicosities.

The quinine solution is convenient because one may use a 2 cc syringe and the solution is on the market in 2 cc sterile ampules.

The technique of the injection is not difficult.

The syringe, needle and solutions must be, of course, absolutely sterile. The needle must be sharp—of 26 gauge preferably.

With the patient seated on the table, the site of the injection is sponged with alcohol. The needle is inserted into the lower-most varicosity in its upper portion. After blood appears in the syringe, the solution is injected very slowly with the extremity in a horizontal position. The structure may be maintained collapsed by pressing the fingers on the surface about the needle for 5 minutes after injection. Then the needle should be withdrawn and a sterile gauze pad quickly applied, followed by a snug elastic bandage from the ankle up to the knee or higher, depending upon the location of the injection. A 4-inch Ace bandage is best.

Some authorities mobilize the blood column by the use of two tourniquets. They believe that the empty vein between the tourniquets is more satisfactorily irritated by the solution as there is less dilution. Personally, I have been unable to distinguish a difference in the two methods of technique, as to results obtained.

The number of treatments given must, of course, depend upon results. Repeat the treatment until a cure is obtained. All patients are able to walk from the office. The treatments are given generally 72 hours apart.

According to Douthwaite(5), about 2 inches of the structure is affected by each needle injection. I have noted this also.

In case of accidental escape of solution, normal saline should be infiltrated.

As the primary cause of varicose ulcers is varicose veins, the treatment is the same, with the addition of sterile gauze and pressure over the ulcer. A good rubber sponge cut about one inch larger than the ulcer border is used. The important point is the pressure over the ulcer area. This is done by the use of a tight elastic bandage which gives an arterial push to the stagnant circulation. Healing is then rapid if this principle is carried out correctly.

CONCLUSIONS:

Sclerosing solutions injected into varicose veins give better results than the surgical method. In addition, the method is safer, is practically free from pain, is ambulatory and less expensive.

A non-functioning organ is eliminated. There is a relief from distressing symptoms and a good cosmetic result is produced.

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VITAMIN B AND ITS SIGNIFICANCE—AN EXPERIMENTAL STUDY

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Well marked deficiency diseases as produced in animals such as beri-beri, xeropthalmia etc., are rare in men; however, there are many persons who present manifestations resulting from a partially deficient diet.

These manifestations may be in the nature of loss of body weight; lowering of the general efficiency of the individual and according to McCollum, Simmons and Parsons(1) the role of food in the etiology of many diseases "involves increased susceptibility to infection, due to lowered resistance caused by faulty diet." The present day American diet consisting largely of highly refined foods such as degerminated cereals, starches, white flour bread, white rice, lean meats, bacon and fats has a relative shortage of vitamins, especially Vitamin B.

One of us (M. G. W.) since the year 1922 has been carefully observing the dietary habits of patients with diabetes mellitus admitted to the Metabolic Department of the Mercy Hospital, Council Bluffs, Ia., and from private practice. The striking feature of this study was that 45 out of 66 patients prior or following the diagnosis of diabetes mellitus consumed food that had a subminimum vitamin level. (2)

S. Harris(3) has recently made a similar observation in patients with gastric and duodenal ulcers.

Wohl(4) has pointed out that the extreme muscle weakness and the high grade obstipation that form conspicuous symptoms in some patients with diabetes mellitus can possibly be accounted for by the prolonged insufficiency in vitamin B in the diets of such patients.

The daily loss of sugar and nitrogen with the resulting loss of "calories" could hardly be given as a logical explanation for the muscle weakness. Likewise the obstipation could not be due to lack of bulk or to the abstraction of water from the intestines for many such patients receive a large bulk of food and have no polyuria and yet they are constipated. That shortage of vitamin B will produce such symptoms is well known. known.

Nelson, Baldwin, Riggs and Cunningham(5) have shown that "fatigue curves produced by animals on diets lacking vitamin B show progressive diminution in amplitude and endurance as the length of time on the diet increases. These curves also show progressive loss of tonicity and an irregularity of contracture that seem very characteristic."

That loss of tone of the bowels is one of the fundamental effects of lack of vitamin B was shown by Gross(6) who mixed charcoal with the food of rats and noted the time it took to appear and dissappear from the feces. With properly fed animals the charcoal was first seen in nine hours and last in 120 hours. On the other hand without vitamin B there was an abnormal retention; the charcoal being dejected between 16 and 384 hours after ingestion.

Rowlands(7) has studied the effect of too little vitamin B in the diet and found that "the constipation and stasis is caused by an actual degeneration of muscular coats of the intestines. The weakened walls of the stomach and intestines sag out of their normal position and are unable to contract strongly enough to keep the contents moving onward at a normal rate."

If is often said by physicians that the mixed diet on which we live is sufficient to prevent symptoms of avitaminosis; they base this statement on the comparative rarity of symptoms which are characteristic of beri-beri; yet the occurrence of symptoms of vitamin underfeeding are often overlooked. It is important to bear in mind that the usual diet of meat, cereals, sugar, white bread do not contain sufficient vitamin B. Vegetables such as cabbage, celery, tomatoes, cauliflower and fruits like apricots, apples were reputed to be rich in vitamin B; yet when tested on pigeons they have been found to contain very little of the vitamin. (Plimmer)(8).

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(2) This includes 44 additional cases since publication of first series.

The above consideration led us to believe that it would be logical to attempt to increase the vitamin B content in an article of diet which plays a large part in human nutrition, and that is white wheat flour. In the process of roller milling the grain of wheat loses its vitamin B potency which resides mainly in the germ and to lesser extent in the outer layers. The chief reason for degerminating wheat flour is the fact that the wheat germ has a pronounced tendency to become rancid; flour that has been degerminated keeps longer, has whiter appearance; and also bakes better. It is, therefore, preferred generally by the consumer.

Mr. F. Woosley, chief chemist of a Western flour mill, and myself instituted a series of animal feeding experiments with the purpose in mind of obtaining a flour which would retain all the commercial advantages of degerminated flour and yet possess a high vitamin B potency.

Of the several substances considered we found that the addition to the flour of a concentrate of brewer's yeast under the trade name of "Marmite" in quantities of one-half of one percent was sufficient to insure constant growth in white albino rats and to prevent the development of polyneuritis in pigeons.

EXPERIMENTS

Albino male and female rats from the Wistar Institute stock were mated and placed on a stock diet of whole wheat, 33 parts, whole milk, 66 parts, and sodium chloride, 1 part.

Young male and female rats, 29 days old and averageing 50 gms. in weight (females) and 70 gms. (males), respectively, were used for the experiment, three in each group. The basal ration comprised a food mixture of purified food ingredients obtained from Harris laboratories. It consisted of:

Casein	18	parts
Cornstarch	51	"
Salt Mixture	4	"
Lard	22	"
Cod Liver Oil	5	"
Agar-agar	4	"

As a source of vitamin B we used white wheat flour containing 0.5 percent of a concentrate of brewer's yeast, designated in the market as Marmite. The complete food mixture was made into a paste to which weighed amounts of flour plus extracts of brewer's yeast were added, replacing equal amounts of cornstarch, in amounts of 5 to 35 parts. The rats were kept in individual cages provided with false screen bottoms to prevent access to excreta. For drinking purposes they were given distilled water containing 2 drops of a stock iodide solution. The total amount of food given daily was weighed as well as the unconsumed food was weighed again, thus giving an approximate amount of the net daily food intake. This proved of no particular advantage, hence the rats were given food adlibitum and they were constantly supplied with food. They were weighed twice weekly and the general condition indexed. The rats that received 35 parts of wheat flour plus concentrate, showed a constant rate of growth, the males averaging 145 grm., by the end of the 11th week and the females by the end of 17 and a half weeks averaged 180 grms. The average

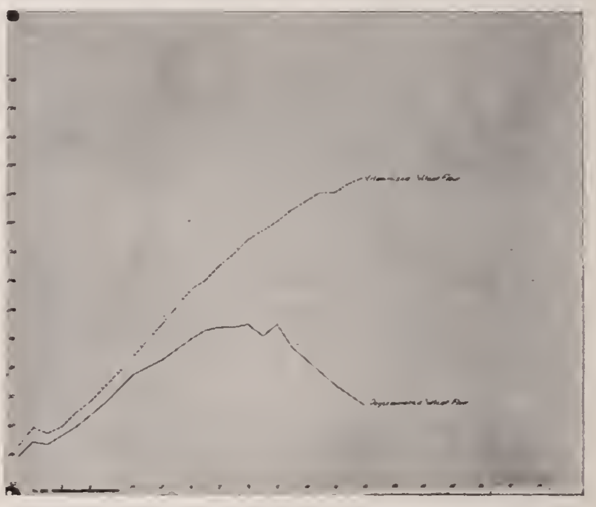

Fig. I. Showing the average growth curves of 3 male rats fed basal ration and vitaminized wheat flour indicated by broken line (- - -); straight line (—) indicates growth curve of controls.

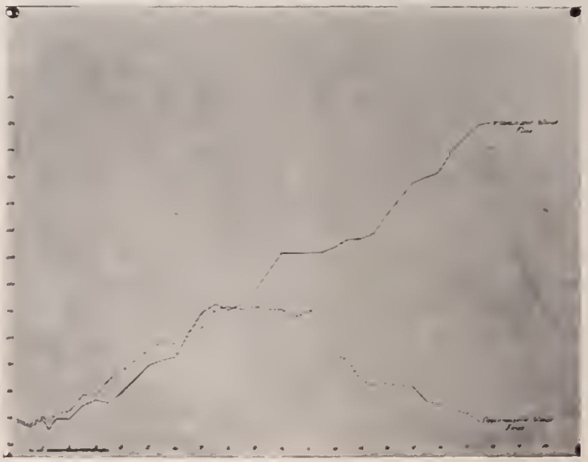

Fig. II. Showing the average growth curves of 3 female rats fed basal ration and vitaminized wheat flour indicated by straight line (—); broken line (- - -) indicates growth curve of controls.

weekly gain for the male was 8.63 grms., and for the females 6.28 grms.

The controls received the identical food as the former two groups, except the source of vitamin B was the usual white wheat flour as used by the consumer. The males continued to grow, reaching an average maximum of 90 grms., by the end of the sixth week; their weight remained stationery for seven days; for the first half of the 8th week they lost 5 grms., but regained it by the end of the 8th week. With the beginning of the 9th week they began to loose their appetite, and the 12th week (beginning) their weight was averaging 67 grms.; they became unsteady in gait and two of them died; the third rat lived until the 18th week, reaching a weight of 56 grms.; 12 hours preceeding its death it developed paralysis of hind extremities.

The female controls reached a minimum weight of 111 grms. by the end of 53 days; their weight remained statonery; till the 10.5 week; resulting in a loss of 4 gms. and then a gain of about the same weight until the 11.5 week, when they commenced to lose rapidly; by the 17.5 week their weight was 68 gms. and they died. The experiments were repeated on a total of 90 rats with similar results.

EXPERIMENT FOR ANTIPOLYNEURITIC SUBSTANCE IN FLOUR PLUS CONCENTRATE

To test for the presence of antineuritic substance we used male pigeons, weighing 342 gms. (A), 319 gms. (B), 330 gms. (C), respectively.

Pigeon A and B received complete food mixture from which the cornstarch was replaced by white wheat flour.

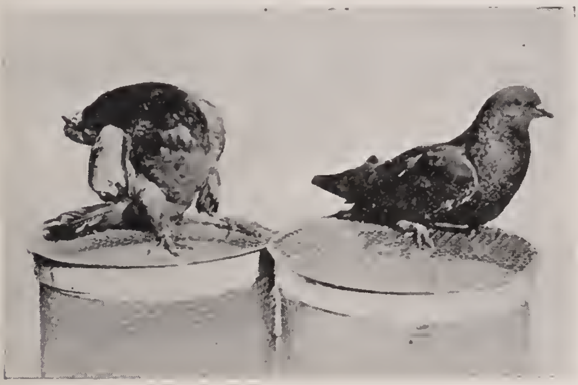

Fig. III. Pigeon to the left shows the spastic form of polyneuritis following a diet of complete food mixture from which the cornstarch was replaced by white wheat flour. Pigeon to the right, control, fed the same diet except the white wheat flour was vitaminized.

Pigeon A lost weight rapidly; was sitting quietly in the cage, moved with effort; and soon lost the appetite for food and had to be fed forcibly. By the 39th day its weight was 230 gms. It showed incoordinated movements of the head: its head became retracted on the spine; it had difficulty in breathing, symptoms which are indicative of beri-beri; and it died 12 hours after it became ill.

Pigeon Cage B; pigeon lost weight and by 21st day its weight was 244 gms.

It became listless; would not attempt to fly; neither to eat; its stool became watery and of yellowish color and on the 21st day it developed the spastic type of beri-beri similar to Cage A. An amount less than ½ gm. of concentrate (amount not accurate as in forcing it down some of it became scattered) was given by forced feeding; 4 hours later its head became relaxed and it was able to stand up. The following morning

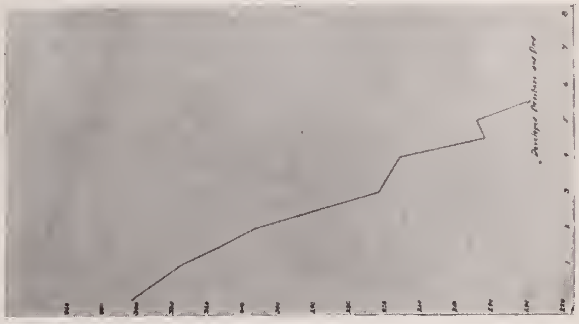

Fig. IV. Curve showing loss of weight, the same pigeon as in illustration No. III.

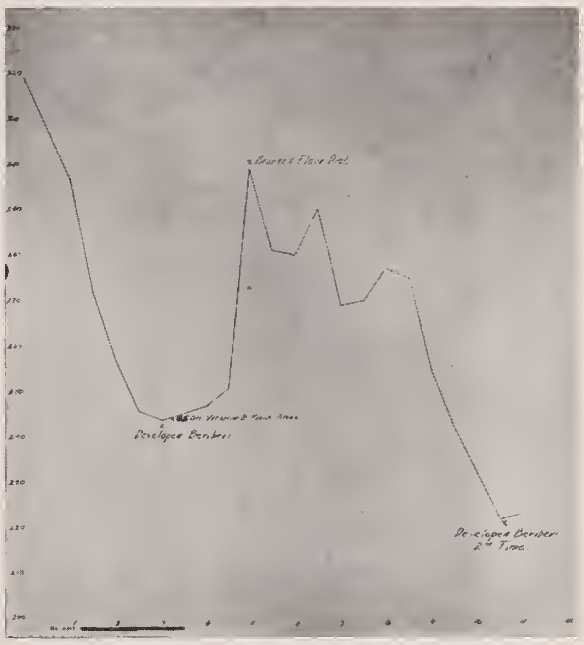

Fig. V. Showing loss of weight and indicating development of polyneuritis; pigeon fed white wheat flour as source of vitamin B. Balanced diet plus wheat flour with concentrate of brewer's yeast caused gain in weight. Wheat flour as source of vitamin B produced polyneuritis the second time.

it was walking around. It was given a balanced diet plus flour plus concentrate and it gained weight rapidly (50 gms. in 10 days). It was placed on white wheat flour and in 30 days it developed beri-beri, the second time its weight being 222 gms.

Control C; pigeon was given balanced food mixture plus flour containing concentrate. Pigeon gained weight, reaching a weight of 400 gms. and remained healthy. It was now placed on Vitamin free flour and began to lose weight, weighing at the end of the 24th week after changed diet, 210 gms., when it was found dead in the cage.

CONCLUSIONS

It would appear that the present day American diet has a relative shortage of vitamins, especially of vitamin B.

To increase the vitamin content of white wheat flour would be a desideratum of importance.

White wheat flour containing 0.5% of brewer's yeast appeared to be sufficient to insure constant growth of white rats and to prevent polyneuritis in pigeons.

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PROCTITIS AND ITS RELATION TO COLITIS*

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The subject of proctitis and colitis is one which involves the study of the entire lower bowel. It has only been possible within the last few years to make an examination of the interior of the large bowel. Previous to the introduction of the pneumatic proctoscope, the only method of rectal examination used, was by digital examination, and by the use of anal speculi. The view which could be obtained and the knowledge gained by these speculi was very limited, and unless there was a great deal of pathology present, the average digital examination did not reveal anything; but at the present time with the pneumatic proctoscope, electrically lighted, we are able to examine the anus and rectum, and a portion of the sigmoid, having a direct view of the bowel wall. We are not able to visualize the bowel beyond the sigmoid, but with a barium enema and the x-ray we are able to determine the contour of the entire colon. One might say that the rectum and sigmoid will serve as an index to the condition of the bowel above, as far as inflammatory and ulcerative processes are concerned.

In examining an inflammatory condition of the lower bowel one usually finds that the active inflammatory process is most evident just within the anal margin, and gradually becomes less active as you proceed upward along the bowel. Because of the function of the rectum and sigmoid, and due to the structure of the mucous membrane, these organs are made especially susceptible to inflammatory conditions. The mucosa itself contains a great number of Lieberkuhn's follicles, and each of these little follicles forms a tiny crypt, in which infectious material may become lodged, and due to the physiology of the large bowel, it is in these portions of the bowel where the excreta lays, and becomes concentrated before being evacuated. It is in this portion of the bowel that the fluid from the fecal mass is absorbed, and this contains many bacteria both virulent and non-virulent. As the mass of feces becomes hardened, through the absorption of fluid, the mucous membrane is apt to become excoriated and abraded, and through lesions of this type, infection enters the bowel wall.

Because of the continuity and similarity of structure between the mucosa of the rectum, sigmoid, and colon one cannot discuss an inflammatory condition of one portion of the bowel without taking into consideration the other portions. Most of the inflammatory conditions in the colon produce some anal or rectal pathology. The proctologist is called upon to treat these conditions, and it is usually his task to determine what portion of the bowel is involved. A great many patients consulting the doctor in regard to anal and rectal conditions have a very small amount of pathology in the anal canal, but by proctoscopic examination we find that they do have a large amount of pathology within the rectum or sigmoid, and if it is in the sigmoid, we cannot help but assume that it extends much higher, because there is no dividing point where the inflammatory process is limited. Patients come in with many different diagnoses as to the condition that is present in the large bowel. Such diagnoses as proctitis, sigmoiditis, diverticulitis, colitis, mucous colitis, membranous colitis, ulcerative colitis, ulcerated bowel, ulcers, fissures, and obstruction. It is then up to the examiner to determine the location of the inflammatory process, which may be present, and to outline some form of treatment.

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*Read before the Omaha-Douglas County Medical Society, November 12, 1929.

I will describe to you the simple proctitis, which is an acute inflammatory process of the entire rectum, extending from the anal orifice to the recto-sigmoid junction. The onset will usually be traced to a definite chilling, over exertion, or to some indiscretion in diet. It is usually preceded by a general aching over the body, with slight chilling, and a rise of temperature, and with a general heaviness through the sacral and pelvic regions. As a rule these premonitory symptoms are not very prominent, and no notice is taken of them until the process becomes more severe, and then the patient will recall that for several days he had such symptoms, as have just been described. By this time he complains of fullness through the pelvis, and a heaviness or a weight as he describes it, with a lot of heat and burning, especially in the rectum. He will have a frequent desire to go to stool. The amount of the movement is small, and the evacuation is accompanied with severe tenesmus. Along with this severe tenesmus, there will be radiation of pain into the back, legs, pelvic organs, and frequently a cystitis with frequent urination. The patient will carry a slight temperature, and the tongue becomes coated and furred, the breath becomes foul, and the patient has a general malaise and headaches and often is dizzy. He says that upon lying down he is more comfortable, and there is less tendency for frequent bowel action while resting, than when on his feet. This is a type of condition for which the patient is usually given large doses of calomel, or large doses of castor oil, or saline purgatives, with the idea that there is something in the intestinal tract which should be thoroughly cleared, in order to relieve the irritation. He will say that the cathartic taken gives rise to more irritation, more pain and especially, more tenesmus. The statement very frequently is made that he is unable to empty the bowel, or that he does not have a feeling of complete emptying at any time. He does not leave the stool long, until he has a desire to stool again, and at this time there will be only a small passage of thin mucous. If the process goes on for a period of several days, the excreta may contain a small amount of blood, due to the severe irritation of the rectal mucosa, and if the process continues longer, the stool contains pus. This is the acute catarrhal proctitis which is seen frequently, and which is usually treated as a simple diarrhea. It rises from something that effects the lower bowel especially, and sets up an irritation in this portion. On an abdominal examination of these patients, if there is any soreness in the abdomen, it will be found in the lower left quadrant or low down in the obdomen. There will not be much soreness across the upper abdomen and very little on the right side, because most of the pathology is in the lower portion of the colon. Usually, by the use of hot irrigations and by a reduction in diet to a bland non-irritating type and rest in bed the acute inflammatory process will subside and the patient will gradually resume a normal diet and take up his usual duties. With the amount of rectal irritation which he has had, he has a susceptibility to acute inflammatory processes in this part, and will tell you that at frequent intervals he has flare-ups in which there is this burning sensation with a frequency of stool, and a backache with mild rheumatic pains, especially across the back and in the loins and in the legs. The attacks are apt to become a little more frequent but less severe in number of stools, and the patient assumes after a time that by keeping the bowels cleared with a cathartic each day that he will avoid having these attacks; so we see then a patient, who has had frequent acute attacks of proctitis who takes a daily cathartic as a means of avoiding these attacks. The period over which this extends is usually a period of anywhere from five to ten years, and then the patient comes to you with the story that he is constipated, rather than having a loose bowel, and that he has found that from time to time he requires more cathartic, and not only more, but cathartics which act more drastically until they come to such a point that the bowel does not empty unless he takes a strong saline or castor oil or some such cathartic. He will tell you that he has frequent headaches, which are relieved by the use of cathartics, that he is subject to dizzy spells, and that he has considerable abdominal pain, usually stating that he has pain in the stomach which comes on after meals but at no definite time. It may come on after breakfast but not after lunch, or it may come on after lunch and not after breakfast, or it may come on only after the evening meal which is the larger meal, and after which it usually occurs most frequently. The pain comes on suddenly, and does not last for any definite length of time. It may disappear just as suddenly as it came on, and is usually relieved by the passing of gas. It is not relieved so much by the erucation of gas, as it is by the passing of flatus. This leads many of these patients into the daily use of enemas. It is at this time that cathartics cease to produce an action, and the patients resort to the use of enemas. You will find, too, that they have eliminated all bulky foods from their diet, and are living upon soups, custards, eggs, milk, and toast. By this time the patient has developed the usual chronic colitis.

The symptoms of the chronic colitis are well known to all of you. There are headaches, general malaise, loss of appetite, abdominal soreness, cramps, flatulence, and tenesmus; the tongue is thick, broad, and coated. Attacks of diarrhea may alternate with the constipation. This is not a true diarrhea but is a frequent emptying of mucus due to the extreme spasticity of the bowel. The stools are usually scanty, small in calibre, and contain mucus, or they may be hard and lumpy like sheep dung, and covered with a mucopurulent material. Then there are attacks in which the patient passes, as they say, large quantities of thick glary mucus after which there is an extreme exhaustion. After any stool the patient feels weak and will have to lie down. The patient is nearly always aware of the approach of one of these attacks, when a large quantity of mucus is about to be passed. He is introspective and analyses every symptom. He can tell you the character of every stool passed, often stating that it appeared as though it were the lining of the bowel, or frequently a specimen is brought in for examination because it appears to be worm like. He reaches a point where he worries if the stool is scanty, and he worries as much if it is profuse. By this time the patient takes a daily invoice of his feelings, perhaps writing them down on paper lest he will omit telling you of some of the symptoms.

You have all seen these people and they are variously labelled as neuroesthenics, mental cases, spastic colitises, atonic colitises, mucous colitises, membranous colitises, and are often times spoken of as ulcerative colitises. However, there is no ulceration present with these; therefore, the ulcerative type of colitis is not to be considered here. There is always a controversy as to the etiology of these conditions. If you talk with a neurologist, you find that the nervous manifestations are primary and the bowel condition is secondary. The internists are, I think, divided in their opinion: some considering the bowel condition primary, and some considering the nervous condition as the primary factor. Proctologists feel that the inflammatory condition of the bowel is the primary process, aggravated by improper habits of living and by the excessive use of cathartics and enemas. I am of the opinion, that the chronic colitis cases seen daily in your offices begin in early adult life and go through the following steps; first, acute proctitis, followed by repeated attacks until it becomes a chronic proctitis, and this process gradually extends up through the colon producing a spastic colitis, followed by an atony, which gives rise to the atonic type, and this is then followed by a diverticulosis, due to the relaxation of the musculature of the bowel wall, and then by a diverticulitis, which consists of an infection of the diverticuli.

My reasoning for this sequence of pathological processes is as follows: Nature has been very good to us by providing reflex protective processes. If one has a tender appendix, he has a spasm of the abdominal muscles, especially the right rectus muscle. If the conjunctiva or iris is inflamed, the eye is reflexively closed; if you have an anal fissure, there is a spasm of the anal sphincter. These are all reflex protective processes. So, if you abuse or irritate the intestinal tract, nature attempts to bring about this protection, first by muscle spasm, in the acute bowel infection. It is made evident by cramping and tenesmus, followed by the passage of an increased amount of mucus. The increased mucus secretion is nature's attempt to protect the mucosa. This increased covering of the mucosa, in turn calls for an irritant or cathartic, which will penetrate this mucus, to produce an action. This makes more spasm, and then you have the spastic bowel, which is demonstrated so frequently in x-ray films, showing deep haustrations through the transverse colon, and descending colon, and a rope like sigmoid. It is at this stage that the patient begins to resort to the use of large hot enemas. We now approach the period where the patient is to develop an atonic bowel. The x-ray will show a large dilated cecum, and transverse bowel, with some spasm in the sigmoid, and especially at the recto-sigmoid junction, and a large ballooned rectum. I may say here that all of these patients have or have had a chronic catarrhal appendicitis, and usually if they have had, they still have pain in the appendiceal region. The acute spastic process has gone, but the mucus secretion continues, and the secretion becomes thicker and more tenacious. So we have our chronic colitis.

When we have an acute proctitis the rectal examination is very painful, to either the insertion of the finger or a speculum. To the touch, the parts feel hot and dry and swollen and the rectum feels full. If a proctoscope can be passed, you will see a fiery red mucosa which is edematous, and the rectum will not balloon out as it normally does, therefore high proctoscopic examination at this time is impracticable. The mucosa, being edematous, has a velvety appearance, and any slight trauma produced by passing an instrument will start an oozing.

In the chronic colitis you will find an abdomen which is quite distended, the abdominal wall is not so tense as during an acute attack, and there is a more generalized tenderness. The most sensitive areas are over the lower left quadrant, and the lower right quadrant, and across the epigastrium just above the umbilicus. The patient has also catalogued his tender areas and can point out every tender spot. He seems to enjoy palpating his own abdomen. The anal and rectal examination in the chronic cases is quite different from that of the acute case. There is usually present considerable anal pathology. First a pruritus with an excoriation of the perianal skin. The more mucus secretion the patient has, the more pruritus he will have. Large skin tags are frequent, and when you see a large mass of external skin tags you can be assured that internal hemorrhoids are present. The skin may be fissured, and there may be true anal fissures present. By inserting an anoscope one is apt to find a cryptitis with an enlargement of all the anal papilla, and as a result of this pathology there will be an anal spasm. If there is no fissure or cryptitis the proctoscope can be passed without pain, and one finds within the rectum a mucosa which is not swollen and edematous but apparently thinned out. The large vessels stand out prominently, but are not clearly defined, and they seem to lay in a rete of fine vessels. The areas between the large vessels have a pale base covered with a network of tiny vessels. It appears very much as a conjunctiva when it is chronically inflamed. The rectum balloons out quite easily, and one can pass the proctoscope easily up to the recto-sigmoid junction where you will find some spasm. After this point is passed the proctoscope can usually be passed six to eight inches farther. In the sigmoid you find the same injection of the mucosa, and covering the surface in many places, you will find strings of thick mucus. It is infrequent to find ulceration or bleeding from any point. In patients in whom a cleansing enema has not been used you will find there is considerable fecal matter clinging to the bowel wall. Often times the patient will tell you that his bowels have emptied completely, and you will find a rectum and sigmoid full of stool. This means that he has lost the normal impulse to empty the bowel.

I have reviewed for you the symptoms and signs of an acute proctitis, a spastic colitis, and a chronic colitis, and my conclusions are as follows:

First, chronic colitis begins in early adult life and is the result of frequent attacks of acute proctitis, and the use and abuse of cathartics, and improper habits of eating.

Second, the nervous manifestations are secondary.

Third, nearly all anal and rectal pathology is secondary to a chronic proctitis and colitis.

Fourth, a patient with a chronic colitis has a colon mucosa which is irritated, and because of the irritation there is an increased absorption from its entire surface making the colon one of our largest foci of infection.

Fifth, because of the frequency of anal and rectal pathology there is a vicious circle. That is, proper elimination cannot take place because of the presence of rectal pathology, and the anal and rectal irritation is made worse by the irritated or inflamed colon which lies above.

ANGINA PECTORIS*

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Falls City, Nebr.

DEFINITION

Angina pectoris is an affection characterized by paroxysms of excruciating pain in the precordial region extending into the neck, shoulder, and down the left arm, and attended by a sense of impending death. Nearly all writers agree that angina pectoris is not an independent disease, but is symptomatic of various cardiac affections, though it is occasionally due to some disturbance of the nervous system.

ETIOLOGY

The lesion responsible for angina pectoris is usually sclerosis of the coronary arteries with myocardial degeneration or disease of the root of the aorta, just at the openings into the coronary arteries. Some of the worst attacks are due to the occlusion of a large branch of a coronary artery by a thrombus.

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*Read before the Richardson County Medical Society, December 6, 1929.

The excessive use of tobacco, and the inordinate use of coffee, tea, and moonshine whiskey, and alcohol, may act as producing causes. Influenza, Bright's disease, gout and syphilis are also to be reckoned with as disturbing forces.

Osler states that this disease is not an affection of the working classes. The life of stress, and strain, particularly of worry, seems to predispose to it, and this is perhaps why it is so common in our profession. Doctor Osler cites a series of 268 cases in which there were 33 physicians, a very large proportion. From John Hunter onward a long list of distinguished physicians have been its victims, among whom may be mentioned in recent years Charcot, Nothnagel, and William Pepper. Jews are particularly prone to this disease, 37 being cited out of 268 cases.

SYMPTOMS

One of the distinguishing features of angina pectoris is its paroxymal character. In rare cases there may be premonitory symptoms, such as dizziness, ringing in the ears, nausea, or hot and cold flashes; but usually it comes on suddenly, and without the slightest warning. The patient suddenly experiences excruciating pain of a lancinating or rending character in the precordial region, which extends to the shoulders and neck and down the left arm to the finger tips, which sometimes become numb and cold. Occasionally the pain extends to both arms. To the intense, stablike pain is added the undefinable and fearful sense of impending death, which is unmistakably written on the face, in the drawn features, the leaden, ashen gray, or livid color, and the surface covered with a cold, beady sweat. The patient rarely cries out, though suffering untold pain. He is afraid to make the slightest movement or outcry for fear of sudden death.

The breathing is shallow and irregular. The pulse is usually tumultuous and irregular, though it may be but slightly disturbed. The paroxysms usually last but a few seconds, though they may last for an hour or more. Generally the pain subsides as abruptly as it began, though the paroxysms frequently terminate with nausea and vomiting, or eructations of large quantities of gas, or the patient, not infrequently, voids a large quantity of pale urine, or has a loose bowel movement.

Following the paroxysm, the patient seems quite exhausted, and may remain so for several days. The attacks vary in frequency from a few days interval to several years.

In rare cases the paroxysms terminate in unconsciousness and in still rarer cases in sudden death.

DIAGNOSIS

The diagnosis is usually not difficult. The sudden onset, the excruciating character of the pain with no outcry, the agonized expression, portending death, the ashen-gray color, and bedewed face, the shallow irregular breathing, and the sudden termination of the paroxysm, the age and sex of the patient (the case being usually that of a male past forty years of age),—are characteristics that can hardly be mistaken for any other disease.

PROGNOSIS

The prognosis depends almost entirely upon the causes giving rise to it. True angina pectoris, however, is always a grave disease, and may terminate fatally during a paroxysm. The extent of the cardiac changes would, of course, determine largely the outcome. If there be extensive sclerosis of the coronary arteries, the prognosis would be unfavorable, and we might reasonably expect a sudden termination of life. On the other hand if it be neurotic in character, the prognosis will be favorable.

TREATMENT

Prevention of attacks in persons who are subject to them is of the utmost importance. The exciting factors are to be avoided. The patient should be instructed to carry constantly such agents as nitroglycerin and amyl nitrite perles, and instructed how to use them.

The treatment of the attack must be prompt and energetic, though carefully conducted, amyl nitrite being inhaled at once from a handkerchief in doses of 3 to 5 drops according to the severity of the attack. Almost as rapidly acting and much more easily taken than amyl nitrite, nitroglycerin is especially valuable in relieving the pain. Fresh hypodermic tablets of 1/100 grain dissolved under the tongue will have an effect in one or two minutes; so states Dr. Anders. If complete relief is not afforded the dose may be promptly repeated every few minutes until the desired effect is obtained. Morphine and atrophine are recommended in the severe pain of angina hypodermically.

The patient should be placed at absolute rest in bed, with a restricted diet.

A case report. Mrs. M., age 68; was under my care from Oct. 1, 1920, to Jan. 1, 1925. During this period her blood pressure ranged from 180 to 210 mm systolic, with sclerosis of the arteries. About Jan. 1, 1925 she was attacked by acute indigestion. She was kept in bed and put on a milk diet. Her blood pressure at this time being 190 systolic.

I was hurriedly called on Jan. 6, 1925. On arriving at the home I found my patient on the bed in a reclining position perspiring very freely; a cold clammy sweat covering the entire body; an ashen gray color of the skin, and absolutely pulseless at the wrist. Temperature subnormal. Very severe pain over the precordial region; also pain in the left shoulder, and arm, and extending to the left hand. She said to me: "Doctor, I believe I am dying". I gave her at once nitroglycerin 1/50 grain; morphine ¼ grain; atropine 1/100 grain, and strychnine 1/30 grain hypodermically. Artificial respiration was used a part of the time when she ceased to breathe, as her respiration was of a Cheyne-Stokes character. The patient was pulseless at the wrist for one hour; then the circulation gradually came back. Four days later, Jan. 10, 1925, at 4 a. m., the patient was found by the nurse, dead in bed.

DERMATOLOGIC CLINICS

ALFRED SCHALEK, M. D.,
From the University of Nebraska, College of Medicine,
Omaha, Nebr.

Case 5. The patient is a man of muscular built and apparent good health, 39 years of age. A week ago an eruption started on the face and neck and since has spread over nearly the whole body. The skin is red, dry, rough, and forms powder-like scales. Itching is severe and constant. This condition is a more or less generalized dermatitis, but not "general exfoliative dermatitis", a name reserved for a distinct pathologic cutaneous entity. General exfoliative dermatitis is a chronic disease with frequent remissions and is due to some profound systemic derangement. It often begins with chills and is accompanied by fever, malaise and exhaustion. At times it follows the absorption of arsenic and other metals and is seen more frequently since the use of salvarsan.

The rash of this patient is an acute condition and purely local. As it started on the uncovered parts of the body, the cause might reasonably be suspected to be external. A great many external substances are irritating, some to every skin, others only in individuals especially sensitive to them. The most common are plants, chemicals, heat and cold, and actinic rays. Many trades necessitating the handling of materials such as, to mention a few, paints, dyes, lacquers, printing ink, furs, tobacco, sugar, and petroleum products are responsible for occupational dermatitis. Our patient is an automobile painter by trade, but as he has worked with paints for four years and this is his first experience of this kind and as the trouble did not begin on the hands, as usual, we must look further for the cause. Upon questioning we find that two weeks ago he went to a farm to help with husking corn. During husking a great many minute sharp particles are thrown into the air, settle on the skin and produce considerable irritation. As far as I know this particular provocative agency is not mentioned in text books but I find it not uncommon.

A dermatitis of this kind subsides soon after removal of the cause, dependent largely on the degree of inflammation set up in the skin. The aim of the treatment is to relieve the itching and bring the skin back to its normal condition. We shall try to accomplish this with frequent application of a liniment of equal parts of olive oil and limewater, a refinement of the old-fashioned carron oil, with the addition of two per cent of phenol. Daily warm baths to which soda or cornstarch are added will also benefit him. The patient should be warned that he seems sensitive to corn husks and should avoid exposures to them.

Case 6. The patient, a man of 50, just came to the clinic complaining about an eruption on his face, which he has had 18 months and which he was told was a chronic eczema. It involves the whole face and extends half way down the neck stopping abruptly with a festoon-like margin. The skin is dark red, slightly infiltrated and has been dry and scaly from the first. The itching is mild and troubles only occasionally. Several dark red flat papules can be seen on the forehead about ¼ inch in diameter each.

Eczema of the face is one of the skin diseases in which the itching is severe, more or less constant, preventing rest and sleep. Excoriations and blood crusts are numerous. If this were a case of eczema of 18 months' duration, the skin would be decidedly more infiltrated and its natural folds greatly exaggerated. Eczematous patches do not exhibit sharp outlines; changes from a dry scaly to a weeping type and to considerable swelling are common. None of these features being present here, eczema must be excluded in the differential diagnosis. Only two diseases need to be considered from the clinical appearance, lupus erythematosus and a nodular non-ulcerating syphiloderm. Lupus erythematosus begins in early life, is patchy and rarely covers very large areas and shows glandular openings, either patulous or plugged with sebaceous debris. It remains unchanged for years or spreads very slowly along the periphery with elevated circinate borders while the centre becomes atrophic and depressed. A nodular syphiloderm has the same pathology as a gumma, but is smaller in size, is more superficial and at times disappears spontaneously by involution. When coalescing into patches it may reach any size. It also spreads along the peripehry with sharply defined circinate borders, the older areas presenting a thin depressed parchment-like appearance. I favor the diagnosis of syphilis, because the trouble started late in life, developed in a comparatively short time, involves a large area and on account of the papules on the forehead which fit in the picture of syphilis but not lupus erythematosus. We shall go thoroughly into the patient's history as to the infection and previous manifestations, examine his body for scars or other evidences, and have a Wassermann test taken. All this, however, may prove negative even in the presence of syphilis. We, then, still have recourse to a biologic examination of a skin specimen and to the effects of a test treatment.

BULLETIN FROM THE LABORATORY OF CLINICAL PATHOLOGY BRYAN MEMORIAL HOSPITAL LINCOLN, NEBR.

Staff Meeting—November 8, 1929.

Miles J. Breuer, M. D.

The purpose of this bulletin is to suggest how the laboratory can be of service to the clinicians in the matter of kidney function testing.

Kidney function is, in general, required (1) preoperatively, to evaluate surgical risks; (2) to confirm or eliminate nephritis as the cause of albuminuria, anemia, edema, or hypertension.

Albuminuria: it is necessary to determine how constantly and under what conditions it is present. Therefore, a number of specimens ought to be examined, collected under various conditions, as in the morning, in the evening, after a meal, after exercise, etc. Also, it is necessary to endeavor by physical examination to rule out local causes, as lesions of the bladder, urethra, vagina, etc.

The function of the kidneys is threefold:

To eliminate the end products of protein metabolism.

To help maintain the normal volume and composition of the blood.

To help in the neutrality regulation of the organism.

To test function adequately to the patient's safety, it is necessary to proceed systematically in accumulating sufficient data on which to base an opinion, and to use correct reasoning in interpreting these data. It is necessary to secure a minimum routine volume of data to give necessary information on:

1. The general concentrating power of the kidneys;
2. Their concentrating power for nitrogen compounds;
3. Their ability to eliminate foreign substances as an index of eliminative function;
4. The physiological consequences of failure to excrete such products as ought to be excreted;
5. The extent of renal tissue involved.

For No. 1, all sorts of complicated procedures, test-meals, two-hourly specimens, etc., have been devised. These methods are all difficult and tedious, and on the whole, give no more information than the 24-hour specimen with recorded fluid intake, and the three-hour basal specimen. This latter is a specimen collected over a three-hour period, with the patient under basal conditions in respect to exertion and intake of food and fluid. A decrease in the specific gravity below 1016 indicates impairment of the kidney's power to concentrate.

No. 2. The excretion of the nitrogenous end-products of metabolism comprises the bulk of the kidney's daily work. To measure this function, 15 gm. of chemically pure urea is given by mouth, and the amount of urea determined in 1-hour, 2-hour and 3-hour specimens thereafter. The normal finding is 2 miligrams of urea per cc. in the second hour; lower findings indicate impairment of the kidney's ability to do its daily work.

For No. 3, the phenolsulphonphthalein test is widely used because its results run fairly closely parallel with the regular functions of the kidneys. Though the test is fairly reliable, and of value if utilized along with other evidence, it must be remembered that the elimination of phenolsulphonphthalein is not identical with kidney function; and that this test alone does not tell the whole story of kidney function.

For No. 4. An increased blood pressure is associated with certain types of nephritis, being probably a compensatory phenomenon for the purpose of increasing the blood volume passing through the kidney in order to maintain excretion at a necessary level.

Increase of non-protein nitrogen in the blood is a consequence of impaired elimination. The determination of blood urea and of total non-protein nitrogen are both useful. As urea is eliminated in the largest quantities, its blood percentage is the first to be affected in case of kidney pathology. An increased amount of urea in the blood signifies, not nitrogen retention, but the necessity of an increased concentration of urea in the blood in order to force the urea through the imperfectly functioning kidney epithelium. As the nephritis advances in severity and extent of involvement, the blood concentrations of uric acid and creatinin are also increased. The relative findings of urea, uric acid, and creatinin give valuable information on the stage of the nephritis and on prognosis.

For No. 5. In the normal kidney, only a small proportion of the total number of glomeruli is needed to carry on its daily work. Because of the big reserve, an excess of ingested water is promptly eliminated as a large quantity of dilute urine. If there is a delay in eliminating water, it signifies that part of the glomeruli are out of commission. This is the information furnished by Volhard's water test.

Suggested Routine in Renal Cases:

1. Examination of several specimens collected under varying conditions, for albumin, pus, blood, and casts.
2. Twenty-four hour specimen.
3. Three-hour basal specimen.
4. Urea-concentration test.
5. Blood-urea determination. If this is high, blood-uric-acid and blood-creatinin.
6. Phenolsulphonphthalein test.
7. Volhard's water elimination test.
8. Repeated blood-pressure examination.
9. In some cases, hydrogen-ion concentration of the blood is advisable, to recognize impairment of the kidney's acid-base equilibrium maintaining function.

Typical Findings in Various Kidney Disorders:

1. Acute Focal Glomerulonephritis: Urine: Albumin +; blood casts ++; concentrating power but slightly impaired; PSP test slightly subnormal; total amount normal; blood pressure normal; blood nitrogen normal; causative organisms in the urine; prognosis good

2. Acute Diffuse Glomerulonephritis: Urine: Albumin ++; blood +++; casts ++; specific gravity low, 1006 to 1014; concentrating power severely impaired; PSP test definitely lowered; blood nitrogen increased; amount of urine much decreased; blood pressure moderately increased, around 180; anemia severe; general leucocytosis; prognosis, some recover, some become chronic, some fatal.

3. Chronic Diffuse Glomerulonephritis: Urine: Albumin +; variable casts and leucocytes +; concentrating power low, specific gravity low; PSP low; blood nitrogen normal, except terminally; amount of urine increased, nocturia; blood pressure increasing, very high at the end. Always the result of a previous acute glomerulonephritis. Prognosis: eventually terminates fatally, but may last many years.

4. Kidney of Pregnancy: Urine, Albumin +; blood +; casts and leucocytes +; concentrating power slightly impaired and specific gravity normal; PSP slightly lowered; amount of urine diminished; blood pressure 160 to 200; blood nitrogen slightly increased; disappears with delivery.

5. Lipoid Nephrosis: Urine: Albumin ++++; casts ++; also leucocytes and lipoids; concentrating ability normal, specific gravity normal, blood nitrogen normal, high blood cholesterol; blood pressure normal, low basal metabolic rate. Is a renal incident in a metabolic disorder, not a true kidney disease.

6. Renal areteriosclerosis: Usually no clinical symptoms Diagnosis made at autopsy.

7. Renal arteriolosclerosis: No urinary nor blood manifestations until late in the disease. Blood pressure, 200 or more. When in late stages, blomerular degeneration occurs, the symptoms of glomerulonephritis become superimposed.

COUNCILOR ANNUAL MEETING

JANUARY 13, 1930

The annual meeting of the Councilors was held at the Lincoln University Club, January 13th, 1930, at 6:30 p. m. The meeting was called to order by Dr. Tornholm. The following members of the Council were present: Drs. Nielsen, Lehnhoff, Rork, Cook, Tornholm, Overgaard, Potter, Selby, Cooper, Douglas, Fordyce and McGrath and President F. S. Owen. In addition to these the following guests were also present: President-elect Hohlen, Drs. Fouts, Hays, Secretary Adams and the Journal Committee consisting of Drs. Bailey and Long. Mr. Gene Huse, publisher of the Journal, was also a guest.

Dr. C. A. Selby was elected President and Dr. Overgaard re-elected secretary. The regular order of business was then taken up.

Dr. Overgaard read the secretary's report. Motion made by Dr. Overgaard and seconded by Dr. Nielsen that this report be accepted and published in the Journal. Seconded and carried.

Dr. Selby read Insurance committee report. Motion made that this report be accepted and placed on file. Seconded and carried.

Dr. Hohlen read campaign committee report. Motion made that this report be accepted and placed on file. Seconded and carried.

The program committee report was read. Motion made by Dr. Overgaard that this report be accepted and published. Seconded and carried.

The report of the committee on Medical Education was read. Motion made that this report be accepted and placed on file. Seconded and carried.

Report of Medical Defense committee read by Dr. Fouts. Motion made that the report of the Medical Legal-Defense committee be accepted and placed on file and that the chairman be highly complimented for his work during the year. Seconded and carried.

Dr. Hays gave the report of the Public Activities Committee. Motion made that the report be accepted and published. Seconded and carried.

Financial report of Defense and Journal Funds read by Dr. Adams.

Motion made by Dr. Potter that the officers be authorized to invest any surplus moneys from time to time as best they see fit, in United States Government bonds. Seconded and carried.

Motion made that Secretary be instructed to invest one thousand dollars for the Defense Fund. Seconded and carried.

Dr. Bailey gave his report on the Legislative committee. Motion made that this report be accepted and placed on file. Seconded and carried.

Motion made by Dr. Douglas that the Legislative committee be authorized, as a committee, to bring in a report on the cost of medical care at the annual meeting before the House of Delegates. Dr. Douglas later withdrew this motion upon finding that there was already a committee for this purpose.

Motion made that the financial reports of the several funds be accepted and published in the Journal. Seconded and carried.

Motion made that the bill made by Amos Thomas for $100.00 be paid and that the secretary be instructed to draw up a warrant for this amount. Seconded and carried.

Journal Committee report read by Dr. Long. Motion made that this report be accepted. Seconded and carried.

Motion made that since an emergency exists that the secretary be instructed to allow twenty-five cents per member for the Journal extra in addition to the amount already allowed and that this become effective from the first of January, 1930. Seconded and carried.

Motion made that the meeting adjourn. Seconded and carried.

SECRETARY'S REPORT

The Nebraska State Medical Association closed the year 1929 with 1,199 members in good standing. This is five less than for 1928. During this year 54 new members were obtained, 39 were reinstated and 80 were dropped for non-payment of dues. This is about the usual turn-over and of course some of those dropped were due to death and removal from the state. For the last three years there has been a slight falling off in membership. Four or six each year, not enough to be serious but it is still enough to cause some wonder as to the cause. One thing that has been noticeable is a tendency of many of our young men to enter the government service. At least 50 requests for recommendations from the United States government have been received during the past year.

At the time the secretary made his report for 1928 he reported that there were two outstanding difficulties between the medical profession and the state government that were unsolved. One of these had to do with the relationship existing between the old board of examiners and the Basic Science Board. The old board was refusing to recognize the Basic Science Board examinations and were requiring candidates to take two examinations. The other difficulty concerned the relationship between the Secretary of Public Welfare and The Basic Science Board in that the Secretary refused to consider reciprocal relations with other states. We are happy to report that during this year both of these matters have been settled and all departments are now working harmoniously.

One other matter of importance to the profession has required a good deal of effort on the part of one of your committees. That is the method of handling compensation cases. The chairman of the committee on Public Policy and Legislation will probably give a detailed report on this subject and it is only mentioned here to report that all concerned feel that a big improvement has been made, and that the secretary of Public Welfare and the Medical Association are cooperating to the fullest.

One other matter of importance mentioned last year as the condition of the County Societies. Many are weak and some are getting weaker, both Keith and Kimball counties have disbanded. Their members, however, have joined adjoining societies. Those of Keith joining Lincoln county and those of Kimball joining Scottsbluff county society, thereby preventing a loss in membership. Several other counties are organizations on paper only. At the annual conference of Secretaries in 1928 this subject was discussed and the secretaries were urged to do everything possible to strengthen them. At the meeting this year the subject was again brought up and opinion seems to have changed. It is now believed that by allowing weak societies to disband and join another, strong societies can be built up and this will be the best for everyone concerned.

Finally the annual conference of State Secretaries. Two things on the program were of interest to Nebraskans. Dr. E. R. Hays was on the program and his paper discribing the work of the Public Activities Committee was by all odds the most practical paper read and Dr. Hays, I think, received more favorable comment from those in attendance than anyone else on the program.

The subject of the cost of Medical Care was also under discussion. This according to Dr. Olin West is our biggest problem. It involves State Medicine in its various ramifications. All of us should be deeply interested. We should follow the work of the National Committee on the cost of Medical Care in its five year program. It is a problem that will take time to work out, but if the medical profession hopes to save itself as an independent profession it must be solved. Consequently all medical men should be seriously interested and should help in whatever way they can to bring about this solution.

—R. B. Adams.

THE PROGRAM COMMITTEE

This Committee for the year 1929 had as its members Dr. C. P. Fordyce as chairman of the Medical Section and Dr. John C. Thompson as secretary. Dr. W. J. Arrasmith was chairman of the surgical section and Dr. H. H. Davis was secretary. The committee held the customary number of meetings and prepared the program which was given at the meeting held at the Elks Club in Omaha. Judging from the comment received the program gave more than the usual satisfaction. The guests selected by the committee and who appeared on the program were Dr. Charles Elliott, professor of medicine, Northwestern University; Dr. Gerald B. Webb of Colorado Springs, Colorado; Dr. Carl A. Hedblom, professor of surgery, Illinois College of Medicine, and Dr. John R. Caulk, associate professor of Clinical Genito Urinary Surgery of Washington University School of Medicine.

Dr. T. Homer Coffey of Portland, Oregon, had agreed to appear on the program, but was prevented by a last minute emergency. The committee, however, was able to secure Dr. A. V. Hardy of the United States Hospital Service to appear in his place.

—R. B. Adams.

PUBLIC ACTIVITIES COMMITTEE REPORT

During 1929 the Public Activities Committee confined its work to four major efforts.

First. The completion of Health Educational Courses in the Teachers Colleges of the State. We did not carry on these programs during the summer and fall terms for we have been endeavoring to have the Teachers Colleges bear the expense of transportation of the lecturers and during the year were unsuccessful. For this year it appears more encouraging for us to get the schools to bear the expense of these lecture courses.

Second. The handling of publicity during the annual session of the State Medical meeting. The program Committee of last year was requested to have all lectures submit an abstract of their papers two weeks before the meeting so that the Public Activties Committee could rewrite the high lights of the individual papers in story form and submit it to the press. We feel as though our efforts in this line were very gratifying during the Omaha session for we were able to have press notices of nearly every paper and more space than is usually allotted.

Under these arrangements the newspapers are pleased to give adequate space for publicity and by supplying our own stories misinterpretations and misstatements are avoided. Should the Program Committee this year notify the essayists the purpose of obtaining the abstracts it would greatly reduce the work of editing the stories for the press.

Third. The Health Week Program which is given to the public in conjunction with the Annual State Medical Association meeting. From the gratifying response to this program I conclude that we shall continue with this activity. We begin by asking the Mayor to proclaim the week in which the State meeting is held shall be known as Health Week. Arrangements are made with one or two churches for the Sunday meetings and throughout the week talks are given to all organized clubs within the city. During our Omaha meeting forty talks were given to lay groups representative of people from all walks of life. The lectures were prepared and designed to cover a range of subjects that would be interesting and educational:

"Home and Health", "Teeth, Tonsils and Posture", "Tuberculosis", "How to Maintain Good Health", "Prevention of Contagious Diseases", "Reasonableness of Modern Medicine", "Cost of Sickness", "Diabetes", "The Prevention of Diseases in Children", "School Health", "Preventable Diseases", "Purpose of Health Week", "Working for Dear Life", "Blood Pressure", "Optimum Health is Obtainable", "Facing the Forties", "The Purpose of School Health Education", "Fresh Air, Food and Sleep", "Sore Feet", "Your Doctor and Mine", "X-ray as it Concerns Health", "Overweight", "What the Community Owes to its Children", "Health Inventories", "Keeping Fit", "Health is a Partnership", "Good Health and Mental Ability", "The Nervous Child", "Influenza and its Sequels", were some of the subjects presented. All lectures were well attended. Many thousands of people were reached by these messages and untold good was accomplished.

To further interest the public in its health and bring it in closer touch with our association, we arranged a Health Exhibit in a large room adjoining our general assembly hall and invited all to attend. Exhibits were prepared by:

Council of Social Agencies, Nebraska Tuberculosis Association, Visiting Nurses Association, School Nurses, Red Cross, Camp Fire Girls, Girl Scouts, Boy Scouts, Creighton Dispensary, Y. W. C. A., Y. M. C. A., Jewish Community Center, Omaha Chamber of Commerce, Northwestern Bell Telephone Co., John Hancock Insurance Co., American Smelting & Refining Co., City Mission, University of Nebraska Dispensary, Metropolitan Life Insurance Co., and U. S. Army.

Fourth. The State Fair Exhibit. Our 1928 Fair Program was so well received by the public and added so much to the educational features of the Fair that the Board of Managers gratuitously turned over to the Nebraska State Medical Association a group of four buildings and made such alterations in construction as to meet our needs for 1929. The State Fair Board also appointed a Superintendent of Health from the membership of the Nebraska State Medical Association and under him the activities of all agencies dealing in health were supervised and directed. The plan of organization and operation under the Superintendent was in five main divisions.

1. A General Manager who had charge of the construction, equipment, housing, schedule, and personnel.

2. The Child Health Division which was under the direction of the University of Nebraska Medical College, included the Baby Show, the 4-H Club, with the examiners assistants and records, and the School Program, which stressed the importance of pre-school examination, toxin-antitoxin and vaccination campaigns, and a health program for rural and city schools.

3. Adult Health, which was delegated to the Medical College of Creighton University, comprised an educational program of lectures and charts and a periodic health examination demonstration.

4. The Exhibits, under which we had the museum with specimens from our two Medical Colleges, Lancaster County Medical Society, Bureau of Animal Husbandry, and a few private collections together with an elaborate display from the Nebraska State Dental Association. The Official Agencies were represented by exhibits from the State Bureau of Health, the City Health Department, and the Nebraska State Tuberculosis Association, Red Cross, Woman's Auixiliary to the State Medical Association, Parent-Teacher Association, Visiting Nurses, Boy Scouts, Camp Fire Girls, Y. M. C. A., and the Y. W. C. A. From the American Medical Association we had an elaborate exhibit of charts, posters, and pamphlets.

5. The fifth division, the Emergency Hospital, was turned over to the Lancaster County Medical Society which equipped, manned and operated this unit in a most efficient manner, caring for some 5,000 people with various injuries and illnesses without charge.

The program was a success. The lectures were well attended. Thousands viewed our exhibits and great interest was manifested in the program as a whole. I shall not take the time to relate the interesting events that occurred in the various departments but I wish to describe our Periodic Health Examination demonstration.

Our building was fitted with a large waiting room, eight examining rooms, a laboratory, an x-ray room, and a specialty room for the examination of eyes, ears, noses and throats. The patients were selected from those who had applied in an adjoining building which contained our exhibits where the patients' histories were taken by two internes. Any person who applied and stated that he was ill or under the care of a physician was refused examination. We took only those who were apparently well. On account of the influence of the mother in the home we gave preference in our selection to women, and attempted, furthermore, to choose applicants who came from all parts of the state.

The Examining Personnel consisted of eight examining physicians and one consultant, a dentist, a laboratory technician, an x-ray technician, an eye, ear, nose and throat specialist, two internes, three nurses, and an office secretary. The examining physicians were changed every day to a new group, the remainder of the staff remaining the same.

Our patients were scheduled to appear for examination eight every half hour, beginning at 1:30 p. m. and continuing until 4. This allowed thirty minutes for each examinaion and gave each physician six patients to examine. It was necessary for us to remain over time some days to take care of the great number of people. Height, weight, and temperatures were taken upon arrival. The history which had been previously taken was given to the nurse who ushered the patient to the examining room and introduced him to the physician. The Periodic Health Examination record blank of the American Medical Association was used.

The patients were stripped to the waist. A nurse was present at the examination of all female applicants. Routine blood counts, hemoglobins, and urinalysis both microscopical and chemical were made on every patient. Blood pressure was likewise taken in every instance. A dentist traveled from one room to another examining teeth. An eye, ear, nose and throat specialist in charge of one room was referred to when conditions warranted special examination. A roentgenologist was in charge of the fluoroscopic unit and many patients were sent to him for special examination.

We were sufficiently equipped to afford all the convenience and safety of a modern office. Clean sheets and examining capes were furnished for every patient. Sterile gloves for vaginal and rectal examinations.

Each doctor was required to record the results of his own examination and sign his name to the blank. He was told that the record would be sent to the patient's family physician and with this information it was certain he would be most careful in his examination and opinion. Two hundred thirty-one adults were examined in the afternoons of four days. The mornings were occupied in the examination of children. In addition to those who were entered in the Baby Contest we examined sixty members of the 4-H Club and seventy-four children of a younger age.

Of the two hundred thirty-one adults examined two hundred were found to have physical defects, one hundred forty-six females and fifty-four males. In the two hundred patients three hundred ninety-nine defects were discovered. In listing the defects we had to bear in mind that a Periodic Health Examination does not necessarily mean a diagnosis. The purpose as I understand it is to detect the abnormal from the normal and when an abnormal condition is found to advise further examination. For instance a defect of vision may be discovered in a health examination but it would require special examination to determine the etiology, degree and type of defect. Under "Heart" we have listed fifteen defects. This may mean that an arrythmia or a murmur is present. It is sufficient in a health examination to record a defective heart, the patient being referred to the family physician for further examination, diagnosis, and treatment.

The list of defects or organs found to be defective follow:

Constipation	15
Gall Bladder	9
Bladder	1
Blood	3
Blood Pressure	15
Appendix	6
Anemia	6
Tonsils	44
Heart	15
Stomach	5
Nutrition	10
Palsy	1
Hernia	6
Feet	11
Varicose Veins	6
Thyroid	17
Focal	6
Hemorrhoids	4
Tuberculosis	3
Rheumatism	1
Mental	5
Nose	20
Eyes	16
Teeth	110
Ears	12
Spine	4
Lungs	22
Carcinoma	1
Lues	3
Kidneys	2
Pelvic	7
Female Genitalia	9
New Growths	4
Total	399

It is worthy of emphasis to report that 86½% of this unselected group possessed physical defects which in a great many were leading to serious physical breakdown. These conditions were found in people who were apparently well and 82% of the defects found could be removed or improved by proper medical attention. To each of the two hundred the following form letter was mailed:

Dear Sir:

The Health Examination which you were given at the Nebraska State Fair revealed certain abnormal conditions which interfer with the normal functions of your body and materially affect your health.

These conditions are remediable if given immediate attention, so if you will send me the name and address of your family physician, your examination record will be forwarded to him and he will give you advice regarding treatment.

Yours very truly,
Nebraska State Medical Ass'n.

We have had response from one hundred forty people requesting their records be sent to their family doctor. In the case of children, instead of following the usual method of mailing the examination blanks to the parents we listed the defects and sent out a form as follows:

Dear Parent:

The Physical examination given at the Nebraska State Fair revealed that your child was in the following state of health:

Should any defects be listed it is advised that you take your child to your family physician for further examination and advice.

Yours very truly,
Nebraska State Medical Ass'n.

Ninety-one physicians, members of the Nebraska State Medical Association were called into service to put on this health demonstration at the State Fair. The public has been educated from our own catalogue and now has greater confidence in our teachings. The Periodic Health Examination has been demonstrated to a sufficient number of people from a large enough area to have state wide influence and from these people we believe a greater demand will grow for this sort of medical service. Physicians have been educated in the possibilities of preventive medical practice and have been taught what to expect from a health examination and how to make one.

E. R. Hays, Chairman.
Public Activities Committee.

GENERAL FUND

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS

January 1, 1929 to December 31, 1929.

Cash Receipts:			
Membership dues		$9,448.00	
Interest		46.14	
Total Cash Receipts			$9,494.14
Cash Transferred to other Funds:			
Journal Fund		$1,771.50	
Defense Fund		2,362.00	
Total Cash Transferred			$4,133.50
Balance available for General Fund			$5,360.64
Cash on Hand January 1, 1929			2,154.69
			$7,505.33
Cash Disbursements:			
Salaries—R. B. Adams		$ 600.00	
Office and Administrative Expense:			
Rent	$ 600.00		
Telephone	92.96		
Printing	136.60		
Stamps	154.18		
Sec. of State Fee	1.00		
F. A. Long (1928 exp.)	36.85		
Insurance Premium	5.00		
A. M. A.	34.85		
Commission on Public Policy and Legislature	6.00		
Thurber, for printing	4.75		
Overgaard for flowers at funerals	15.00	667.19	
Miscellaneous Expense:			
Councilor Expense	357.87		
Annual Meeting	21.50		
Huse Publishing Co., Programs	50.52		
Program Committee	16.00		
Speakers for Meeting	215.46		
Service Charge—Peters	4.36		
K. S. J. Hohlen	650.00		
State Fair Committee	570.55		
Public Activities Committee	868.68		
Dr. E. R. Hays—salary	1,000.00		
Chairman on Public Policy and Legislation	74.00		
United Savings and Loan Association	1,000.00		
Lincoln Printing Co.—printing of Constitutions	114.00	4,932.94	
Convention Expense:			
R. W. Fouts	115.36		
A. D. Dunn	115.36		
Alice Cary Gilchrist	130.00		
Dr. Welch	62.32	423.04	
Total Disbursements for Year 1929			$6,623.17
Balance—Cash on Hand December 31, 1929			$ 882.16

STATEMENTS OF INVESTMENTS

Jan. 1, 1929 to Dec. 31, 1929

Investments on Hand January 1, 1929:		
Cash Held by Omaha Natl. Bank	$ 12.60	
Securities Held by Omaha Natl. Bank	4,370.00	$4,382.60
Balance in Account—Omaha Loan & Bldg. Assn.		1,396.72
Balance in Account—Conservative Sav. & Loan		2,739.00
Balance in Account—Nebr. Central Bldg. & Loan		1,573.22
		$10,091.54
Additions to Investments During year 1929: By:		
Interest Credits—Omaha National Bank	$ 185.17	
Transfer from Income Account—Omaha National Bank	100.00	
Dividend Credits—Omaha Bldg. & Loan	63.54	
Dividend Credits—Nebr. Central Bldg. & Loan	81.67	
Dividend Credits—Conservative Sav. & Loan	124.65	
Investment—United Sav. & Loan	1,000.00	
Interest Credits—United Sav. & Loan Assn.	55.43	$ 1,610.46
		$11,702.00
Withdrawals During Year 1929:		
Trustee Fee Year Ending February 8, 1929	8.75	
To Peters Trust Co.—Fee of Date	7.50	
Transfer to Principal Account	100.00	116.25
Investment on Hand January 1. 1930		$11,585.75

Represented by:		
Cash Held by Omaha Natl. Bank	$ 81.52	
Securities Held by Omaha National Bank	4,470.00	
Balance in Account—Omaha Bldg. & Loan Assn.	1,460.26	
Balance in Account—Conservative Sav. & Loan	2,863.65	
Balance in Account — Nebraska Central Bldg. & Loan	1,654.89	
Balance in Acct.—United Sav. & Loan Assn.	1,055.43	$11,585.75

DEFENSE FUND

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS

January 1, 1929 to December 31, 1929

Cash Receipts:			
Share Dues Received from General Fund		$2,362.00	
Interest Received		20.85	
Total Cash Receipts			$2,382.85
Cash Disbursements:			
R. W. Fouts, Salary		$ 600.00	
Attorney Fees:			
H. A. Bryant	$ 303.55		
Gaines, McGilton, Van Orsdel & Gaines	51.00		
R. F. Stout	200.00	554.55	
R. W. Fouts, Expense		160.51	
United Savings & Loan—Investment		1,000.00	
Total Cash Disbursements			$2,315.06
Excess Cash Over Disbursements			$ 67.79
Cash on Hand January 1, 1929			$1,086.45
Balance December 31, 1929			$1,154.24

STATEMENT OF INVESTMENTS

Jan. 1, 1929 to Dec. 31, 1929

Investments on Hand Jan. 1, 1929:		
Cash Held by Omaha National Bank	$ 15.80	
Securities Held by Omaha National Bank	1,800.00	
Total Jan. 1, 1929		$1,815.80
Interest Credited During Year		90.00
		$1,905.80
Cash Transferred:		
Trustees Fee for Year Ending 2/8/29	$6.25	
To Peters Trust Co.—Fee to Date	5.50	11.75
		$1,894.05
Additions to Investment:		
Investment—United Sav. and Loan Assn.	$1,000.00	
Interest Credits—United Savings & Loan Assn.	55.43	$1,055.43
Investment on Hand January 1, 1930		$2,949.48
Represented by:		
Cash Held by Omaha National Bank	$ 94.05	
Securities Held by Omaha National Bank	1,800.00	
Balance in Account—United Sav. & Loan Assn.	1,055.43	$2,949.48

JOURNAL FUND

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS

January 1, 1929 to December 31, 1929

Direct Journal Receipts:			
Advertising Space		$5,003.54	
Cuts		90.03	
Copies Sold		9.20	
Subscription to Journal		51.75	
Dividend Cooperative Advertising		264.55	
Total Direct Receipts			$5,419.07
Share Dues Received—General Fund			1,771.50
Total Receipts—All Sources			$7,190.57
Direct Journal Disbursements:			
Salaries:			
F. A. Long	$1,200.00		
R. B. Adams	1,300.00	$2,500.00	
Publication Expense:			
Huse Publishing Co.	$4,451.13		
Baker	330.63		
Bank Charge	3.49		
Uni. Press Clipping Bureau	42.00	4,827.25	
Total Direct Disbursements		$7,327.25	
United Savings & Loan—Investment		1,000.00	
Total Disbursements			$8,327.25
Excess Disbursements Over Cash			$1,136.68
Cash on Hand January 1, 1929			$1,906.63
Total Cash on Hand			$ 769.95

STATEMENT OF INVESTMENTS

Jan. 1, 1929 to Dec. 31, 1929

Investments on Hand January 1, 1929:			
Balance in Account—Omaha Loan & Bldg. Assn.		$2,685.25	
Balance in Account—Standard Savings & Loan		1,543.70	
Balance in Account—Union Loan & Savings		1,781.81	
Total—January 1, 1929			$6,010.76
Additions to Investments During Year:			
Represented by:			
Dividend Credits — Omaha Loan & Bldg. Assn.:			
July 1, 1929	$60.41		
December 31, 1929	61.76	$122.17	
Dividend Credits — Standard Savings & Loan:			
July 1, 1929		38.60	
Dividend Credits—Union Loan & Savings:			
July 1, 1929	53.45		
December 31, 1929	55.06	108.51	
Total Dividend Credits during year			$ 269.28
Investment made to United Savings and Loan, January 1, 1929			1,000.00
Dividend Credits			55.43
Investment on Hand January 1, 1930			$7,335.47
Represented by:			
Balance—Omaha Loan & Bldg. Assn.		$2,807.42	
Balance—Standard Savings & Loan		1,582.30	
Balance—Union Loan & Savings		1,890.32	
Balance—United Sav. & Loan Assn.		1,055.43	$7,335.47

The Nebraska State Medical Journal

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B. F. Bailey..........Lincoln
R. B. Adams, Ex Officio..........Lincoln

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Vol. XV March No. 3

ANNUAL DUES—CALL FOR PAPERS

The annual dues for 1930 are now delinquent. Send $8.00 plus your local County Society dues to the Secretary of your County Society at once.

If you wish to read a paper before the next annual meeting in May, send you name and title to the office of the secretary, R. B. Adams, Centre-McKinley Building, Lincoln, Nebr., right away.

NOTICE OF PROPOSED AMENDMENT TO CONSTITUTION

It is proposed to amend Section 3 of Article VIII of the Constitution of the Nebraska State Medical Association to read as follows:

"Except that the Councilors shall be elected by a majority vote of the delegates present from that Councilor District at the meeting of the House of Delegates on the morning of the last day of the general session."

NOTES

Hereafter, look for Roster of Officers in last column, on last page of reading matter.

The Supreme Court in the case of Peterson vs. Millnitz, from Pierce county, in giving a decision said "a pedestrian cannot be said to be justified in failing to look in all directions for the approach of cars before attempting to cross the street." This squarely places a part of the responsibility on the pedestrian. It is said that in France if a pedestrian is injured he is arrested and punished for obstructing the street. Apparently we are becoming French minded.

THE MEETING OF THE COLLEGE OF SURGEONS IN OMAHA IN FEBRUARY

Something of the vigor and vim of good leadership and the eagerness to learn of the newer things in surgery were evidenced at the sectional meeting of the American College of Surgeons in Omaha early in February. The sessions opened promptly at nine o'clock with fifty doctors present and the numbers on the program followed one another with amazing promptitude and with unflagging interest throughout the two days of the meeting. Two hundred surgeons and general practitioners were present and to show that the interest in the meeting was wide spread it may be stated that such distant points as Laramie, Bismark, Mankato and Kansas City were represented at the meeting.

The cancer problem came in for much discussion as usual. Dr. Ralph Luikart urged immediate postpartum cervical repair as a preventative of malignancy. Dr. Palmer Findley stated that as between operation and radium treatment the evidence at present is in favor of radium, as a choice of procedure in cervical cancer. Dr. W. A. O'Brien, assistant professor of pathology, Minnesota University, urged biopsy in all suspicious cases. Dr. J. P. Lord presented a case diagnosed as bone sarcoma, treated with radium, with apparent recovery, and well, after two years. This case provoked considerable discussion and it was suggested that the case was not proven by laboratory and that the process may have been inflamatory.

Dr. John R. Nillson presented a varied series of fractures showing end results almost unbelievable. He stated that nephritis, diabetes and syphilis have no appreciable effect on the healing of bone.

Dr. C. A. Roeder suggested "Dysthyroidism" as a fourth classification of thyroid pathology. The class of cases referred to "come out of a clear sky", have exophthalmus, but no enlargement of the gland.

Orthopedic clinics were given by Drs. Lord, Schrock and Johnson and by Dr. James Martin and a variety of conditions presented showing results wonderful to relate.

Space forbids comment on all clinics excellent as they were.

The talk of Dr. Seale Harris of Birmingham speaking on the preliminary and postoperative treatment of peptic ulcer brought forward the use of carbohydrates, particularly, glucose for preliminary operative preparation for gastroenterostomy. He quoted Rehfuss, Hawk, Hamburg, to show that carbohydrates leave the stomach rapidly and cause little peristalsis. He emphasized the importance of blood sugar and suggested strained orange juice, glucose and lactose in preparation of patients. He thinks peptic ulcer may be a deficiency disease, one of the possible factors of which may be vitamine deficiency.

Considerable interest was taken in the postgraduate instructional conferences, a unique feature of the meeting, although the registration in some of the courses was not filled. These courses were well prepared postgraduate talks on different subjects and were much appreciated by all who took part in them, and aroused lively round table discussions.

The Fellowship dinner was attended by one hundred guests. Dr. Max Emmert, president of the Nebraska Section, College of Surgeons, gave his presidential address. He thinks it is well to get rid of a series of theoretical ideas learned in medical school after engaging in professional problems of everyday life. He made a strong plea for the ethics of medicine. He made a plea for special training of those adapted to the work, before engaging in major surgery. Five years of general practice and a year as surgical assistant to an able man were suggested as minimum requirements. Since most of the students when graduated now are bubbling over with surgical knowledge, one wonders if internal medicine is not the branch requiring the postgraduate work to fully qualify the embryo physician.

The election of officers for the Nebraska Section resulted in elevating Dr. J. E. M. Thomson, Lincoln, to the presidency; Dr. Earl Johnson, Grand Island, to the vice presidency and the reelection of Dr. William Schearer, Omaha, as secretary.

A feature of the sessions was the appearance of and talk by Dr. F. C. Minty of Rapid City, known as the "flying doctor". He praised airplane service for the doctor in a sparsely settled territory, sky-high!

Medical movie-talkies were given in Omaha for the first time and elicited great interest in the possibilities they foreshadow in future medical teaching.

A Hospital conference was held in an adjacent room during the sessions.

A meeting for the general public was held in the Technical High School auditorium the last evening of the meeting at which several prominent men from a distance discussed public health problems.

Altogether, the meeting was without a doubt the most continuingly interesting one ever held in Nebraska, and the best attended.

THE LONG TAILED COAT AND WHISKERS OF THE PHYSICIAN OF THE EIGHTIES

The older physicians well remember that in their earily days as practitioners whiskers were supposed to be a needed appendage. Whiskers added dignity and certain appearance of wisdom to the professional man. In those days few physicians would deign to appear in a sack business suit in the everyday work. The Prince Albert and other swallow tailed coats were much in use. A physician could then be spotted almost anywhere by his professional appearance. Nowadays it is hard to tell a physician from a horse jockey. With the coming of the ultra-scientific in aseptic surgery, whiskers were banished, and with the development of the more practical world, swallow tailed and Prince Alberts gradually gave way to the more practical modern sack business suit. In the eighties and early nineties, whiskers, silk hats and Prince Albert coats were almost omnipresent at medical society meetings.

PERSONAL OBSERVATIONS OF THE COFFEY-HUMBER TREATMENT FOR CANCER

Editor's Note: The following letter from Dr. Frank S. Nicholson, St. Paul, Nebr., who is at present sojourning on the Pacific coast and who has been in daily contact with the much heralded cancer clinic, is here given as a Nebraskan's impressions gained at close range. The letter was received February 24, after the Journal had gone to press.

To the Editor:

Knowing how deeply interested you are in advancement along medical lines I am sending you some of my personal observations on the new Coffey-Humber treatment for cancer.

I have been in attendance at the clinics for the past two weeks, and have been given every opportunity to observe the cases as the treatment progresses.

As you probably know, the serum used is obtained from the cortex of the suprarenal glands of sheep. Dr. Coffey says: "We believe it is a hormone, and when we see case after case in which the extract reduces or abolishes suffering and softens the malignant tumors, it is impossible to evade the tentative conclusion that

LIBRARY OF THE
COLLEGE OF PHYSICIANS

we have the hormone that plays the crucial part in the stability of the system."

The patients are composed of all classes and ages, the youngest being a boy 3½ years of age with a large sarcoma of the right kidney. All patients tell the same story in regard to the relief from pain, stating that after the second or third injection the pain is gone entirely, or is practically negligible. One woman told me that she had been taking fifteen grains of morphine daily and after her fourth injection had reduced the amount to half a grain every day or two, on account of sleeplessness. And then she imparted the important information by a delighted smile, "I did my washing last week, for the first time in many months".

I find in all cases where the tumor is palpable, that there is a distinct softening of the tumor after three or four injections of the serum: and where the tissues have been breaking down, the serum produces a distinct necrosis of the cancerous tissues and a more rapid sloughing, leaving a clean granulating base. There is also an increase of the appetite in many cases and a distinct feeling of personal well-being. This was so pronounced in one case that the man declared he did not need any more treatment (in his opinion) and was willing to give up his place in order that some other sufferer might receive the benefit of treatments. He was, however, persuaded to continue the use of the serum until the doctor discharged him.

Dr. John D. Humber, in commenting on the serum, stated: "We have no doubt that our extract kills cancer tissue, without injuring normal tissue and without any constitutional disturbance to the patient."

Dr. A. M. Moody, head of the laboratories at St. Francis hospital, San Francisco, states that "The effect of the extract is far more powerful in the killing of cancerous tissues than that of either radium or x-ray, which both cause injury to the normal tissue."

Both Dr. Coffey and Dr. Humber are explicit in pointing out that they do not claim to have a cure for cancer and that the present work is largely experimental. They did not intend to make their work public for another year, but it leaked out into the public press and now they are swamped with a flood of patients from all over the west.

All treatments are given without charge, but they will not accept a case unless accompanied by a statement from a physician that it is non-operative and will not respond to radium or x-rays.

—Frank S. Nicholson.

DR. CLAUDE FORDYCE CLAIMED BY AMERICAN MEDICAL ASSOCIATION

Dr. Claude P. Fordyce, practitioner at Falls City since 1915 and councilor of the Third District for the last eight years, has been called to Chicago as assistant to Editor Morris Fishbein of the *Journal of the American Medical Association,* and took up the newer work February 1.

His many Nebraska medical friends, while regretting his removal from this state, rejoice with him in his advancement to a position and a field usefulness very agreeable and very suitable to his talents, education and training—and after all, Nebraska has but loaned him to the American Medical Association.

DR. CLAUDE FORDYCE

It is thought that he is to become editor in fact of the magazine, *Hygeia.*

Doctor Fordyce was born in Illinois, March 6, 1883; graduated from Nebraska Wesleyan University, B. A., 1905; B. Sc., 1907; attended Nebraska University College of Medicine two years; Washington University, M. D., 1910; was surgeon at Grand Island Soldier's Home, 1911-1913; located at Falls City, 1915.

Doctor Fordyce is a nationally known author on matters pertaining to outdoor life. He has published a number of books, notably, "Trail Craft", "Touring Afoot". A new volume, "Health Outdoors" is now in press. He is an associate editor of *Outdoor Life.* He is, and has for some years been, president of the Nebraska Writer's Guild. He is a son of Dean Charles Fordyce of the University of Nebraska.

The physicians of the Third Councilor district honored Doctor Fordyce at a banquet at the Hotel Weaver in his home town, January 25, and a complimentary dinner was given for him at the Paxton Hotel, Omaha, January 29, by Drs. Roy Fouts, Adolph Sachs and A. F. Tyler, to which a number of officials of the Nebraska State Medical Association were invited guests.

Dear Reader:

The Journal and the Cooperative Medical Advertising Bureau of Chicago maintain a Service Department to answer inquiries from you about pharmaceuticals, surgical instruments and other manufactured products, such as soaps, clothing, automobiles, etc., which you may need in your home, office, sanitarium or hospital.

We invite and urge you to use this Service.

It is absolutely free to you.

The Cooperative Bureau is equipped with catalogs and price lists of manufacturers, and can supply you information by return mail.

Perhaps you want a certain kind of instrument which is not advertised in the Journal, and do not know where to secure it: or do not know where to obtain some automobile supplies you need. This Service Bureau will give you the information.

Whenever possible, the goods will be advertised in our pages; but if they are not, we urge you to ask the Journal about them, or write direct to the Cooperative Medical Advertising Bureau, 535 N. Dearborn St., Chicago, Illinois.

We want the Journal to serve you.

EDITORIAL PARAGRAPHS

Hershey, Nebr., is calling for a physician.

The wonder of the California climate is a state of mind.

If the forthcoming History of Nebraska Medicine is delayed much longer it will be ancient history when it appears.

The Public Health Service reports that there were at least 649 recognized cases of undulant fever in the United States during 1928.

One old adage might be profitably revised to read—Better be a young man's slave than an old man's darling; if recent scandals mean anything.

Ultra-violet rays are undoubtedly a valuable therapeutic agent under controlled supervision, but what is the matter with our God-given sunshine?

Ergosterol is one of the newest words added to medical nomenclature and it will be well to know that it is pronounced ergos-terol; not ergo-sterol.

During the calendar year 1928, 38,000 cases of small-pox were reported in the United States in spite of the fact that small-pox can be prevented by vaccination.

The next annual meeting of the Nebraska State Medical Association is scheduled for May 13, 14, 15, at Lincoln. Members should at once begin to plan for it.

New ads this month are—Michael Reese Hospital, Chicago, and the Wilbur Supply Co. Read the ads and patronize the advertisers, for they help to make the *Journal* what it is.

The Nebraska State Medical Association is entitled to, and is requested to send, three delegates to the United State Pharmacopeal Convention to meet at Washington, D. C., May 30.

The December *Statistical Bulletin* of the Metropolitan Life Insurance Co., says that when the full reports for 1929 are tabulated the result will show the lowest tuberculosis mortality rate yet attained.

It is now Dean Poynter in name as in fact. Dr. C. W. M. Poynter, who has been acting dean of the Nebraska University College of Medicine for some time, has been elected dean by the board of regents.

Words frequently mispronounced at medical society meetings and elsewhere: Data, day-ta, not dat-a; status, stay-tus, not stat-us; apparatus, apparay-tus, not apparat-us. Another word much abused is attack, often pronounced attact when the present tense is meant.

The Bulletin of the Omaha-Douglas County Medical Society comes to us in much enlarged form and with twenty reading pages. It presents an upstanding appearance and makes this editor take notice. Evidently the *Bulletin* is prospering financially, with the aid of 4 3-4 pages of unethical advertising—and we wonder!

An admirer of *The Nebraska State Medical Journal* says the popularity of the magazine is due to its "human touch" in addition to its scientific worth, which sounds good to those responsible for the touch. The doctor, besides being a scientific creature, is a human being needing a human touch just as living beings need vitamins.

The American Child Health Association features May Day as Child Health Day and suggests various organizations put on programs featuring maternity care, child care, sanitation, small-pox and diphtheria immunization, recreation. Dr. E. R. Hays, Falls City, chairman of the public activities committee, is endeavoring to promote observance of the day.

It is said that more Nebraska teachers subscribe for *Hygeia* than do Nebraska physicians, which may be true since the proportion of teachers to physicians is so much greater; but now that our own Dr. Claude P. Fordyce is to be editor of *Hygeia,* state pride will impell many physicians who had heretofore overlooked *Hygeia,* to subscribe for it, and do so at once.

The report of the annual councilor business meeting is published in this issue. It should interest every member and should be read by every member. A study of the reports therein given gives one a good idea of how the organization is functioning, and how the money is expended. Good work requires adequate compensation and the reports show where the money is used.

Encouraging reports come from the west coast about a new anti-cancer serum. The professional standing of the originators cannot be questioned. Experiments on subjects of cancer are now being made with the serum without money consideration. The medical profession, while hoping the encouraging reports are fully warranted, must maintain an attitude of judicial reserve for the present.

The nurses organizations have gone on record advancing the daily and weekly rates for nursing service. Rate for ordinary weekly service has been raised from $42.00 to $49.00; other service in proportion. Nurses have never been well paid when one considers that the nurse is on duty on an average of but nine months per year. It seems, however, certain that an increase of rates will result in less employment of trained nurses and more shifting with partially trained help.

The American Commission of the International Hygeine Congress has invited the Nebraska State Medical Association to be represented at the world health session to be held at Dresden, May 15-September 30, 1930. This is a very important meeting and offers opportunities for multitudinous contacts that may not be created again for several decades. Any one interest in the trip and the congress can get fuller information by applying to our secretary, Dr. R. B. Adams. It appears that the trip will be made in a body from New York and that the syndicated trip including about everything, and of the best, will cost but $774.

The International Society for Crippled Children will convene at Toronto, March 17, for a three-day session. Each session will be devoted to the discussion of specific phases of the problems encountered in restoring crippled children to health and happiness. Education, vocational rehabilitation, treatment and care, investigation into the causes of crippling, questions of financial and professional aid and management of this world-wide movement will be brought before the delegates.

Scopolomine, introduced some years ago as a "truth serum", has been thoroughly discredited, says *International Medical Digest*. The proposition was that if scopolomine was administered to a supposed criminal he would divulge the truth. Recently a Japanese chauffeur was suspected to have murdered the son of his employer. Stoutly denying the crime he was subject to scopolomine anaesthesia and while under the influence of the drug he confessed to the crime. When the effect of the drug wore off he again stoutly asserted his innocence. Therefore a second injection was given, with entirely negative results. At this stage the real murderer was discovered.

The Public Health Service reports that there are constantly under observation by physicians in the United States 474,000 cases of gonorrhoea and 643,000 cases of syphilis. The Public Health Service has continued its efforts to reduce the prevalence of venereal diseases, through cooperation with state and local health authorities, by the carrying on of education work and the conducting of research in problems related to the treatment and control of syphilis and gonorrhea. New activities recently undertaken included an investigation of the syphilis problem among rural Negroes in the southern states and a campaign for prevention of venereal diseases among seamen in the American merchant marine and other beneficiaries entitled to treatment in the hospitals of the service.

THIS MONTH IN MEDICAL HISTORY
MARCH, 1930

In 1730, in order to check the increase in population (in China) rewards were offered by the Government to certain classes of persons to remain single.

John Wesley, founder of Methodism, died at London, March 2, 1791. During his career as a clergyman he found time to publish a medical work—Primitive Physick (1747).

One thousand years ago (930 A. D.), Rhazes, the Arabian Hippocrates, was 70 years old. He had written his classical descriptions of small-pox and measles, making a distinction between them for the first time.

Dr. Franklin Bache (1792-1864) was professor of chemistry in Jefferson Medical College, 1831-1841. With Dr. Wood he prepared a Pharmacopeia (1830) which was the foundation of the U. S. Pharmacopeia and Dispensatory.

March 16, 1867, the London Lancet published the first of Lister's papers on the Antiseptic system. The article was entitled "On a New Method of Treating Compound Fracture, Abscess, Etc., With Observations on the Condition of Suppuration".

In 1830 there were 24 states in the United States with a population of about thirteen million. The number of alien immigrants during that year to the United States was about twenty-three thousand. The center of population was in West Virginia.

Albrecht von Haller was just beginning practice in Bern, Switzerland, in 1730. He had been a pupil of Boerhaave, Albinus and Winslow. He later became City Physician and Librarian in the City of Bern. His classical work on Physiology was published in 1754.

The first house in Boston, Massachusetts, was built March 17th, 1630. This house was built for Governer Winthrop. The estimated population of all the colonies at that time was fifty-seven hundred. Governor Winthrop died on March 26, 1649, during his tenth term of office as governor and leaving as a widow his fourth wife.

The Lex Salica or Salic Law was revoked by Ferdinand VII of Spain in 1830. This law had been introduced into Spain by Philip V in 1714. The law was one of the earliest of the laws of the barbarians and was put into written form in rude Latin as the customary law of the German tribes some time before the year 800.

In 1830 important improvements in achromatic lenses were worked out by Joseph Jackson Lister, the father of Sir Joseph Lister. These improvements contributed greatly to the development of the compound microscope. The single lens microscope was invented by Jansen in Holland in 1590 and by Fontant (Italy) and Drebbel (Holland) about 1621. Microscopes were made with double glasses when the law of refraction was discovered about 1624. The earlier microscopists were Kircher (1602-1680), Hooke, who invented the solar microscope (1635-1703), Swammerdam (1637-1680), Leenwenhock (1632-1723) and Malpighi (1628-1694).

NECROLOGY

Clyde G. Reynolds, Yreka, Calif.; University of Nebraska College of Medicine, 1924; a native of the Palmer, Nebr., neighborhood; was killed in an automobile accident on or about December 6, 1929, aged about 34 years. He leaves a widow and two children.

Ada Platz, Beatrice, Nebr.; University of Nebraska College of Medicine, 1909; physician at Beatrice for a score of years; member, Nebraska State Medical Association; died at a Lincoln hospital, January 23, 1930, aged forty-seven years.

Francis M. Neville, Canton, Ohio; medical college data unavailable; a practitioner at Nebraska City abount 1903; died January 15, 1930, aged sixty-three years.

Henry Y. Bates, Wheaton, Minn.; medical college data unavailable; a boyhood resident of Sarpy county and a practitioner of Springfield, Nebr., at one time; later practiced in Minnesota; died February 2, 1930, aged seventy-six years. Interment, Springfield, Nebr.

W. D. Robbins, Chicago Heights, Ill.; Northwestern University College of Medicine, 1884; practitioner at Nebraska City, where he was married, in the early nineties; later in practice in Lincoln, until 1905 when he moved to Chicago Heights where he remained the last 26 years of his life; died recently of heart and kidney disease, aged sixty-eight years.

OFFICIAL HEALTH PROGRAM OF THE WOMAN'S AUXILIARY OF THE AMERICAN MEDICAL ASSOCIATION

I. Public Hygiene.

Fundamentals upon which Auxiliary work for improvement of public hygiene should be based:

1. Recognition of the fact that public health work is a highly technical job, requiring scientific, technically trained workers. That health work undertaken by lay women with no knowledge of the public health problem as a whole is necessarily fragmentary and ineffective.

2. Recognition of the fact that every state, county and city is entitled to a scientific full-time health department (organized not to treat the sick, but to prevent disease and promote health), adequately financed, free from political domination, and providing continuity of service to a trained personnel so long as work is efficient.

3. Recognition of the fact that the first and most fundamental job for lay organizations like the Auxiliary is to secure such scientific full-time health departments and adequate health protection, in their state, their county, their city or town.

4. Recognition of the fact that where efficient, full-time, scientific health departments do not exist (and only about ten per cent of the rural districts of the United States have anything approaching adequate health protection), health activities must be initiated and carried on by volunteer unofficial agencies; but that all such work should be so planned and administered as to serve as stepping-tones toward the full-time official health department, and that when the full-time official health department, with workers trained for public health work, has become an accomplished fact, lay organizations should support and cooperate with the official workers and should be willing to take orders from them.

5. Recognition of the fact that no health department, state, county or city, can do effective work without intelligent cooperation of the public; that such public cooperation depends upon wide-spread health education; that lay organizations can do this educational work, and are needed for it; and that the Auxiliary can be one of the most valuable tools for an official health department to use in this work, because it can by its education of the public concerning the official health department's work and needs, be the means of gradually eliminating or preventing political interference with an efficiently working department, and thus insure to it uninterupted public service.

Most volunteer agencies do not yet realize the wastefulness of their individualistic efforts. One of the first things the Auxiliary should do is to work for a change of attitude in other volunteer women's organizations.

Health officials know that it is not always the work which makes the greatest emotional appeal to the public which most needs to be done. Unfortunately most women do not know this. This is something the doctors' wives might well undertake to teach other women.

The National Auxiliary recommends, therefore, that each State Auxiliary undertake, under the direction and with the help of the Public Health Committee of the State Medical Association and of its Advisory Council a study, first of all, of the fundamental principles of health promotion and disease prevention; second, of the set-up considered essential by public health experts for an effective state health department, of qualifications of personnel, adequate budget, and the like; and third, of the state health conditions; that it devise means of acquainting all the state board members with the result, and that recommendations for educational work by the county Auxiliaries be based upon the conditions found.

In states where all is well and where time has developed good official health machinery and good health conditions, general knowledge of the fact will tend to prevent interruption of the excellent work, and will be a source of satisfaction to the women of the state.

In those states where there is much yet to be done, this investigation will indicate what sort of work needs doing first. For example:

In those states which are not in the Birth Registration Area, the Auxiliaries would, without doubt, wish to tackle, as their first job, the ninety per cent birth registration problem.

In those states in which the state health department believes the "County Health Unit" to be the solution of the rural health problem, the county auxiliaries should be encouraged to take as their chief work such persistent and wide-spread education of the public as will gradually create a general demand for the full-time county health department.

In those states where the rural health work is directly done "long distance" by the state health department, the county auxiliaries, if willing to work, and work under the directions of the state health department, can carry on intensive local health education work which would be impossible for the state department without intelligent local cooperation.

To those auxiliaries which agree with these ideas the committee recommends the following outline of study:

1. Vital Statistics. Their value. Compare the vital statistics of the state with those of other states. Compare the vital statistics of the different counties of the state. Compare the vital statistics of the cities with other cities in the state, and in the United States.

2. The State Health Department; its organization; and program: For general state work. For cooperating with the counties in improving county health conditions.

3. The value of the Public Health Nurse.

4. The County Health Unit as a possible solution of the rural health problem.

5 Milk: Milk standards, why necessary, what milk standards your community needs. How are these needs being met?

6. Housing: Your community housing laws. Housing conditions as they have developed under these laws and as they affect health. Improvements needed.

7. General Sanitation and its relation to the death and morbidity rates. Sewage disposal. Water, Garbage, Flies. Dust and street cleaning, etc.

II. Personal Hygiene.

The improvement of personal hygiene in any community is almost entirely a matter of education. Here again the Auxiliary members must first educate themselves before they can take a safe part in educating the public. The committee, therefore, recommends that the Auxiliary study programs shall include such subjects as:

Health Promotion: Prenatal care. Child welfare—infant and pre-school hygiene, school hygiene, mental hygiene, social hygiene. The advantage to the public of general compliance with health regulations. The periodic health examination. Control of communicable diseases.

The entire program should close with a survey of all the private agencies doing health work in the community, and a discussion of the possibility and desirability of centering the direction of all such work in a full-time, scientific health department, under which the private agencies, while still maintaining their identity, would work in complete cooperation.

NOTICE TO AUXILIARY MEMBERS

You are urgently requested to send to the chairman at once any names that you wish placed in nomination by the nominating committee for the following offices:

President (a Lincoln woman), vice president, treasurer and two directors. Also a delegate to the national meeting at Detroit in June.

Mrs. A. E. Cook, Chairman,
Nominating Committee,
Randolph, Nebr.

AUXILIARY NEWS NOTES

The Board of Directors of the Womans' Auxiliary to the Nebraska State Medical Association met on January 23rd at the home of the president, Mrs. A. P. Overgaard in Omaha. The new board is as follows:

President, Mrs. A. P. Overgaard, Omaha.
Vice President, Mrs. Oliver Everett, Lincoln.
Secretary, Mrs. C. C. Tomlinson, Omaha.
Treasurer, Mrs. F. L. Wilson, Stuart.

Directors: Mrs. F. A. Long, Madison; Mrs. S. A. Preston, Fremont; Mrs. Morris Nielsen, Blair; Mrs. F. F. Teal, Lincoln; Mrs. A. E. Cook, Randolph; Mrs. G. B. Dent, North Platte; Mrs. G. H. Walker, Lincoln; Mrs. C. A. Rubendall, Omaha.

Chairman of Standing Committees: Organization, Mrs. E. W. Rowe, Lincoln; Hygeia, Mrs. E. A. Creighton, Red Cloud; Public Relations, Mrs. F. W. Heagey, Omaha; Revisions, Mrs. C. C. Tomlinson, Omaha; Publicity, Mrs. Clyde A. Roeder, Omaha.

At this meeting it was voted to donate $10 toward the expense of providing a uniform system of receipt books for the use of county, state and national auxiliary treasurers.

Dawson County Auxiliary is most enthusiastic over its plan for wiping out diphtheria and it is to this end that this group is working.

The Womans' Auxiliary to the Omaha-Douglas County Medical Society met on Wednesday, December the fourth, at the Fontenelle Hotel, for luncheon. Dr. Earl C. Sage gave an interesting talk on the Sheppard-Towner Act. The annual business meeting and the election of officers followed.

Five County Auxiliary (Madison, Stanton, Pierce, Antelope, Knox) plans to show health films in schools.

Films are available on a wide variety of health subjects at the cost of transportation only. Films on tuberculosis may be had entirely without expense through the assistance of Miss Alice Marshell of the Nebraska Tuberculosis Association, 400 Paxton Block, Omaha.

The Womans' Auxiliary of the American Medical Association has prepared a series of study programs to be issued each month for the use of county auxiliaries. The January envelope dealt with the most common defects in children—their effects—what is being done to overcome them. These interesting study programs have become a part of the regular monthly meetings of several county auxiliaries.

The Womans' Auxiliary of the Lancaster County Medical Society gave an attractive tea at the home of Mrs. H. J. Lehnhoff, Lincoln, early in February. Mrs. B. F. Williams, recently returned from a European trip with her husband, entertained the forty ladies present with an illustrated account of the trip. Music was furnished by a stringed trio.

—T. H. R.

MID-WINTER GRADUATES UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE AND HOSPITAL ASSIGNMENTS

Howard Royer, Elmwood, Grant hospital, Columbus, O.; Albert C. Schmidt, Eustis, Columbus hospital, Milwaukee; Gene D. Caldwell, Omaha, Grasslands hospital, Valhalla, N. Y.; Dale A. Lloyd, Omaha, California Lutheran hospital, Los Angeles; Rose Linsman, Omaha, Children's hospital, San Francisco; Edward M. Mark, Ravenna, California Lutheran hospital, Los Angeles; Clarence I. Drummond, Lincoln, King county hospital, Seattle; William E. Olson, Sioux City, Gorgas hospital, Ancon, Panama canal zone; Frank S. Furman, Omaha, University hospital, Omaha; Thomas L. Gritzka, Talmage, Baylor hospital, Dallas; Charles E. Gurney, Lincoln, University hospital, Omaha; Loyd E. Griffis, Beatrice, United States army medical corps; Kenneth Gates, Omaha, University hospital, Omaha; Everett G. Brillhart, Hastings, St. John's hospital, Tulsa, Okla.; Raymond G. Lewis, Fairfield, City hospital, Cleveland; John M. Neely, Lincoln, Ancker hospital, St. Paul; Louis Marx, Lincoln, University hospital, Omaha; Lloyd P. Hetherington, Omaha, King County hospital, Seattle; Lloyd M. Mousel, Cambridge, Tacoma General hospital, Tacoma, Wash.; Robert H. Moore, Nelson, Kansas City General hospital, Kansas City, Mo.; Charles P. Baker, Worthington, Minn.; University hospital, Omaha; Melvin C. Bolender, Lincoln, Jennie Edmundson hospital, Council Bluffs; Winifred R. Blume, Emerson, Immanuel hospital, Omaha; Arthur E. Jensen, Omaha, Immanuel hospital, Omaha; Horace H. Whitlock, Mitchell, United States public health service; Jerry C. Kildebeck, Hardy, Methodist hospital, Omaha; Herbert F. Anderson, Columbus, Methodist Hospital of Southern California, Los Angeles; William Wayne Waddell, Beatrice, Lakeside hospital, Cleveland; Keith G. Folgar, Lincoln, private practice; John M. Sheldon, Omaha, University hospital, Ann Arbor, Mich.; Robert Gale Boyd, Central City, Royal Victoria hospital, Montreal; Robert L. Hook, Creston, University hospital, Omaha.

REPORT OF COMMITTEE ON JOURNAL AND PUBLICATION

The publication of the Journal for 1929 amounted to 508 pages of reading matter. It may be of interest to note that there were published 108 original articles, 36 personal editorials and 42 contributed editorials and 252 inches of Editorial Paragraphs—an average of 22 inches of editorial paragraphs a month.

The income from advertising was not quite equal to that of the year before, so that our working surplus is slightly reduced.

For the past year there has been an accumulation of original matter awaiting publication, so much that it has been somewhat embarrassing to the editor at times. New material, offered this winter, could not be declined since it offered refreshing variety for which an editor is always looking to hold interest in the Journal, and has, therefore, been accepted for publication during the winter and early spring months.

Because of the wealth of material in hand the editor would like to expand a little for the early months of the year anyway, by adding 8 reading pages. This will cost approximately $42.84 per issue additional. A year ago, at the suggestion of Dr. W. O. Bridges of the committee, the per capita to be requested was reduced from $1.50 to $1.25. This, in the light of the experience of the past year, was a mistake. The committee will, therefore, ask for a reconsideration and that the per capita allowance to the Journal Fund, be restored to $1.50. The $300 that this will yield will nicely balance our budget.

January 13, 1930.

Respectfully submitted,
F. A. Long,
B. F. Bailey,
R. B. Adams.

THE SOCIETIES

The annual dinner of the **Omaha-Douglas County Medical Society** was held on January 14th at the Fontennelle Hotel, Omaha.

Dr. Langdon opened the meeting and thanked the various committees for helping him during the year of his presidency.

The chair was turned over to Dr. C. W. Pollard, the new president. Dr. Pollard then introduced the chairmen of the various committees:

Dr. Earl C. Sage, Chairman—Program Committee.

Dr. Frank P. Murphy, Chairman—Educational Committee.

Dr. John F. Allen, Chairman—Preventive Medicine Committee.

Dr. Frank Conlin, Chairman—Public Affairs Committee.

The speaker of the evening was Dr. A. W. Harding of Detroit, who spoke on the "Milk Problem".

192 members attended the dinner.

The regular meeting of the **Lancaster County Medical Society** was held January 7, Dr. A. W. Erskine of Cedar Rapids, Iowa, was the guest at dinner at the University Club and later addressed the society in the Sharp Building on the "General Principles of X-ray and Radium Therapy." He discussed briefly the mechanism of production of x-ray and pointed out the similarity in action of x-rays and the gamma rays of radium. He classified the physiological action of these rays into three groups, first the stimulation and destruction of specialized cells, second the dissolution of connective tissue and third the destructive action on malignant cells. As an example of the action exerted on specialized cells he cited the use of x-ray in the treatment of acne in which the effect is produced by the suppression or destruction of the specialized sebacious glands. He also discussed the same type of action applied in the treatment of hyperthyroidism. He stated that surgery is usually the method of choice in handling this condition because x-ray produces its effect very slowly and because the patient usually discontinues treatment as soon as improvement is manifest and before a cure can be affected. As an example of the second action, namely the dissolution of connective tissue he discussed the treatment of keloid in which x-ray is the only theropeutic measure which is effective. Another important example of this action combined with the first action is in the treatment of uterine hemorrhage. He stated that x-rays should be used as treatment in this condition if no other indication for operation exists and in the case of fibroids when the fibroid is not too large. He stated that x-ray treatment is positively indicated if the hemoglobin is below 60%. He also mentioned the treatment of tonsils by x-ray as an example of the application of this action on connective tissue, but stated that operative treatment was much to be preferred. In discussing the x-ray treatment of malignant disease he stated that here the effect was dependent upon the destructive action of the rays. In epithelioma good success is to be expected with cure in about 90% of cases. When the epithelioma occurs on the back of the hand only about 50% are cured unless large destructive doses are used. Epithelioma of the lip he thinks are best treated by wide excision with x-ray of the glands of the neck. The next best treatment he considers is fulguration followed by x-ray. Cancer of the breast he stated is frequently not cured because operation is too long delayed. Any painful lump in the breast is sufficient reason for operative attack for otherwise the diagnosis may be wrong in two out of ten cases. X-ray may be expected to produce some palliation and may occasionally make a tumor operable by reducing the glands in the axilla. He advocates post-operative treatment but feels that pre-operative treatment may disillusion the patient and may postpone surgical excision. Cancer of the cervix is best treated by destructive doses of combined radium and x-ray. Dr. Erskine treated x-ray and radium as a therapeutic agent discussing their action, effects, indications, and untoward effects and gave us a talk with distinct practical application. In the discussion and questions which followed Drs. Rowe, Flanagan, Warner, Owen, Kail, Covey, Hohlen and Smith brought out some further details.

The regular meeting of the **Lancaster County Medical Society** was held in the Sharp Building, January 21, with President Dr. George H. Walker presiding.

Dr. L. J. Owen read the first paper of the evening on "Two Common Skin Diseases"; acne and mycotic infections. Acne—He stated that acne disregarding eczema as a clinical entity is the most common skin disease and one commonly neglected by the medical profession. The pathology consists in a subacute and chronic infection limited to the sebaceous glands. The face, back and chest are most frequently involved. It usually begins about puberty. He spoke on various forms of treatment stating that diet, vaccines and local applications all have occasional and temporary value but that x-ray must be depended upon to get lasting results. Mycotic infections—He discussed in some detail the various types of mycotic infection, particularly actinomycosis, tinea corporis, tinea cruris,, tinea capitas, tinea barbae and epidermophytosis. He classified the cases seen in his office during a period of three years and found that epidermophytosis confined to the feet constituted 33%, of the hands 24%, and of the feet and hands 8%. Mycosis of the nail constituted 17%. Finally he outlined the common treatment of these conditions. The paper was discussed by Drs. E. E. Angle, Katskee, Hompes, Smith, Hohlen, Reinhardt and Owen.

The next paper of the evening was read by Dr. A. B. Chaloupka on "Congenital Fissures of the Teeth." He outlined the dangers of infection occurring deep in these fissures with resultant solution of the enamel and decay of the teeth. He advocated early examination of children with dental care if the fissures occur in such a way as not to be self-cleansing. He showed a number of lantern slides demonstrating the existence of these fissures and the impossibility of reaching the depth of the groove by a dental instrument or tooth brush. The paper was discussed by Drs. Gibbons, Smith, Hancock and Chaloupka, who emphasized the importance of the condition and the difficulty of diagnosis. It was felt by the essayist that x-ray would not demonstrate the defects.

The last paper of the evening on "The Management of Cases of Gastric and Duodenal Ulcers", was read by Dr. Clayton F. Andrews. The purpose of the paper was to present a resume of the methods that have been proven successful in the treatment of peptic ulcer. He emphasized the role of foci of infection in the production of ulcer. Gastric ulcers occur in proportion of 25 to 73 duodenal ulcers, the gastric ulcer being more serious because of the deformity of the stomach, the greater seriousness of perforation and the danger of malignant degeneration. The surgical treatment also carries a greater ultimate danger. He outlined differential diagnosis between gastric and duodenal ulcer. He spoke of the modern crystallization of medical and surgical treatments and stated that medical treatment was the one of choice in uncomplicated duodenal lesions, while surgery is indicated in the lesion occurring in the stomach. He outlined the three lines of therapeutic attack, (1) the removal of foci infection; (2) the lessening of peptic activity by bland diet and alkali and (3) the surgical treatment is definitely indicated when pyloric obstruction exists. He discussed the use of various operations in combating pyloric obstruction, emphasizing particularly gastroenterostomy. He discussed the indications for gastroenterostomy with or without excision of the ulcer and partial gastrectomy when ulcer occurs in various positions in the stomach. Finally he emphasized the importance and outlined the pre-operative and post-operative treatment of these cases. In summarising he stated that medical management of early uncomplicated duodenal ulcers is probably wise but the diagnosis of gastric ulcer makes surgical treatment imperative. An interesting discussion followed the paper by Drs. Welch, Hohlen, Whitham, Covey, Lehnhoff, Emerson and Fry. In the discussion it was brought out that the radical gastroenterostomies advocated by the Germans is impractical in this country. Some exception was made to the statement that all gastric ulcers are primarily surgical. Following the paper moving picture films, furnished through the courtesy of Davis and Geck, were shown, picturing very vividly the technique of gastroenterostomy and partial gastrectomy.

—R. H. Whitham, Secretary.

The January meeting of the **Madison Five County Medical Society** was held at the Hotel Norfolk on the 21st. About fifty physicians and their ladies were present. Dr. H. W. Orr, Lincoln, presented the subject of "Wound Infections and Local Suppurations". He showed a number of slides to illustrate his theme. He developed his theory of the treatment of osteomyelitis and compound fractures—debridement, iodine and alcohol sterilization, sterile vaseline dressing and infrequent (about monthly) change of dressings.

Dr. W. O. Colburn, Lincoln, spoke on "Respiratory Diseases in Children". He dwelt on the association of sinus infections and middle and internal ear infections in relation to pneumonias and cited a number of cases in point.

Dr. P. H. Bartholomew, chief state bureau of health, Lincoln, gave a talk on the work of the bureau in its relation to contagious and infectious diseases. He explained the laws and regulations and pleaded for a fuller cooperation of the profession in public health work. He advocated a full-time county health unit consisting of a public health nurse and a directing board. The meeting was one of unusual interest. Much credit is due those members of the society who in below zero weather braved the elements to travel from 30 to 60 miles to be present.

The **Saunders County Medical Society** elected Dr. E. T. McGuire, president, and Dr. J. R. Swanson, secretary. At the dedication of the Wahoo Community hospital, January 12, Dr. McGuire gave an address on "The Hospital and the Doctor".

The **Pawnee County Medical Society,** held at Pawnee, elected Dr. P. J. Flory, president, Dr. L. D. Harmon, secretary.

HUMAN INTEREST TALES

The village of Alvo is said to need a physician.

Dr. F. M. Duffy has left Omaha to locate at Enid, Okla.

Dr. S. F. DeVore has moved from Hartington to Sioux City.

Dr. F. H. Kucera, of Verdigre, has been reported ill for some time.

Verdigre is to have a new physician in Dr. L. J. Melvin, formerly of Platte, S. D.

Dr. E. B. Lewis of Lincoln is to become associated with Dr. R. S. Martin, Red Cloud.

Dr. J. Hewitt Judd has become connected with the "Gifford Clinic" as ophthalmologist.

Dr. Ralph Schroeder has been named head physician at the Douglas County hospital.

Dr. F. F. Farr from St. Louis has become associated with Dr. George H. Morris, Oshkosh.

Dr. R. D. Bryson, Calloway, has acquired the Wright hospital and will hereafter operate it.

Dr. and Mrs. A. L. Ambrose, Guide Rock, are spending the winter at St. Petersburg, Florida.

Dr. and Mrs. Frank Nicholson, St. Paul, have gone to California in the interest of the doctor's health.

Dr. P. L. Gillespie, formerly of Wymore, has located at Falls City in succession to Dr. Claude Fordyce.

The marriage of Dr. Wayne Waddell, Beatrice, and Miss Jeanne Rathbun, Fremont, February 7, is announced.

Dr. Thomas Stander, whose paternal home is Louisville, this state, has become connected with a clinic at Pueblo, Colo.

Dr. G. W. Earl, who left Litchfield a short time ago to locate at Gibbon, has moved to Omaha to take up a hospital position.

Dr. J. Dwight Davis, son of Dr. Homer Davis, Genoa, has located at Long Beach, Calif., to engage in the practice of internal medicine.

Through the complete destruction by fire of a bank building at Battle Creek, Dr. F. X. Ruloff lost his entire office equipment, early in January.

Dr. Morris Fishbein, editor Journal American Medical Association, spoke at the Jewish Welfare Center, Omaha, January 23, on "Food Fads and Follies".

Dr. F. A. Brewster, Holdrege, has arranged to assume charge of a hospital at Oberlin, Kansas, and plans to use his airplane for daily trips to Oberlin.

"Eating—For What" was the title of an address given by Dr. Victor E. Levine, Omaha, before a joint meeting of the luncheon clubs at Norfolk, February 11.

Press reports indicate that the license of Dr. L. B. Lake, Omaha, to practice medicine in Nebraska has been revoked for unprofessional and dishonorable conduct.

At the Minneapolis meeting of the American College of Physicians in mid-February Fellowships were conferred on Dr. J. C. Thompson, Lincoln, and Dr. John R. Kleyla, Omaha.

Dr. Leroy Crummer, who within the past year moved to Los Angeles, has been appointed clinical professor of medical history and bibliography in the University of California Medical School.

It is announced that Dr. Frank Ready has located at Hartington in association with Dr. J. M. Johnson. Also that Doctor Ready and Mrs. Edith Greenberg of St. Peter's, Minn., were married January 11.

Dr. Jennie Callfas, Omaha, was appointed by President Hoover a member of the annual assay commission which met at the Philadelphia mint to inspect the fineness and standard weight of gold and silver coins.

Dr. Olga Stastny, Omaha, President-elect of the Medical Woman's National association, in an address at Washington, D. C., recently, gave the women a new slogan, "Learn to loaf like men". She plead for moments of complete relaxation in the semi-recumbent position for business women, with feet raised, at odd moments.

BOOKS RECEIVED

ESSENTIALS OF MEDICAL ELECTRICITY, by Elkin P. Cumberbatch, M. A., B. M. (Oxon), D. M. R. E. (Camb.), M. R. C. P., 10 mo., 443 pages, with eleven plates and one hundred sixteen illustrations. Published by the C. V. Mosby Co., price $4.25.

THE MEDICAL MUSEUM, MODERN DEVELOPMENTS, ORGANIZATIONS AND TECHNICAL METHODS, based on a New System of Visual Teaching by S. H. Dankes, O. B. E., M. D., D. P. H., D. T. M., & H., Director of the Wellcome Museum of Medical Science. 8 mo., 183 pages with illustrations. Published by the Wellcome Foundation, London, England.

SYMPTOMS OF VISCEREAL DISEASE, A STUDY OF THE VEGETATIVE NERVOUS SYSTEM IN ITS RELATIONSHIP TO CLINICAL MEDICINE, by Francis Marion Pottenger, A. M., M. D., L. L. D., F. A. C. P., cloth, 8 mo., 426 pages with eighty-seven text illustrations and ten color plates. Published by the C. V. Mosby Co., 1930. Price $7.50.

THE BOARD OF HEALTH

The Nebraska law governing boards of health makes specific provision for certain individuals in the membership. The CHAIRMAN of the Board of Health is responsible for the performance of the duties imposed on said Board. The SHERIFF is CHAIRMAN of the COUNTY Board of Health. The MAYOR is CHAIRMAN of the CITY Board of Health.

The QUARANTINE OFFICER is in each instance the POLICE MEMBER of the Board of Health. This is essential because quarantine is an exercise of the police power of the state. Not infrequently (and partly as a result of an obsolete law) some physicians attempt to assume authority to establish quarantine—even procuring a card some place and posting it on the premises. A physician could be utilized to post a quarantine card or notice legally by the proper authority deputizing him to do so and the Board of Health supplying the correct card for the time and place, but there is no provision for indefinite deputization or delegation of such authority. It is the duty of the police member of the Board to investigate and prosecute violators of the Rules and Regulations.

The MEDICAL ADVISER is the technical member of the Board. Therefore, it devolves upon him to perform the epidemiologic work required: To personally investigate and examine persons to establish, or when necessary confirm, the diagnosis of contagious disease; to take cultures from suspected individuals for the Board, and such additional duties as circumstances indicate for the purpose of being enabled to advise the Board upon the basis of personal knowledge, whereby intelligent action can be taken toward safeguarding the health of the community. Diagnosis is practice of medicine.

All reports of reportable disease will be made to the SECRETARY of the Board of Health having jurisdiction—in the county this means the County Superintendent, whereas the SECRETARY in cities or towns is the Chief of Police or Marshall.

"TOO BUSY" TO ATTEND MEDICAL MEETINGS

"Beware of the physician who is "too busy" to attend medical meetings, especially those of his own county medical society. All kinds of excuses are offered by some physicians as to "why" they seldom attend medical meetings, but the most frequently heard is that they are "too busy". The physician who is too busy, that he does not have time to associate with his colleagues, had better check up on himself and find out what's wrong. Who is it that writes your medical text books? Who is it that contributes the important articles to current medical literature? Who is it that you call in consultation when you have the opportunity to secure the best medical talent?

If you will make inquiry, you will find that it is the busiest men in practice. Yet these same men are those who are constantly attending medical meetings. You will find them at county, district and national meetings. They are there because they feel they cannot afford not to attend. They are anxious to keep up with the progress of medicine and recognize in medical society meetings the easiest way to accomplish this. One of the reasons they ARE "big" is because of their persistent attendance at medical meetings. Think of the scores of medical meetings, such well known men as Deaver, Mayo, Jackson, etc., attend. The great Osler was one of the most persistent attenders of medical meetings and seldom missed a meeting of his local county society.

Doctor, shake yourself and move. Come on out and attend more meetings. If you don't like the programs, tell them how they can be made more attractive. If you don't like those in charge of things, get your crowd organized so you can put in power those who will work harder for the society and who will put on programs that will appeal to all. But in any event, come out to the meetings. Don't hide yourself under a bushel."

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Jos. Bixby, Geneva, Vice President	1931
A. L. Cooper, Scottsbluff, Vice President	1931
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A. E. Cook, Randolph	1930
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L. W. Rork, Hastings	1932
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B. F. Bailey, Lincoln	1931
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ALTERNATES

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ANNUAL MEETING, LINCOLN, MAY 13, 14, 15, 1930

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PRESIDENT'S ADDRESS TO NEBRASKA SECTION OF THE AMERICAN COLLEGE OF SURGEONS*

MAX EMMERT, M. D., F. A. C. S.,
Omaha, Nebr.

Five years ago there was born into the family of Medical Organizations a new child which was named The Nebraska Section of the American College of Surgeons in honor of its father, The American College of Surgeons.

The birth of this child did not elicit any marked enthusiasm from its father nor a gladsome support from the other members of the family. However, by careful nursing and constant watching to protect it against the diseases of childhood, this infant has developed into a lusty boy which is more and more attracting the interest and support of its father.

It might be well to review the objects of this association as stated in the Constitution:

1. To promulgate and practice the ideals of medicine and surgery as established and recognized by the American College of Surgeons.

2. To co-operate with the American College of Surgeons in all things pertaining to the relief of sickness and suffering.

3. To have constantly in mind and to work zealously for the advancement of medicine and surgery in the State of Nebraska.

The first two objects of this association may be passed without comment as they have, in my opinion, been exemplified by the practices of a majority of the fellows of the Nebraska Section. It is undoubtedly true that the ideals have been lost and practices engaged in by some of our members and even by a few of our outstanding members, which would not bear the light of investigation. Though these facts are known and no effort has been made to bring the participants to the bar of judgment, as provided for in our Constitution, these individuals are held in quiet contempt by the great outstanding majority of this organization because their activities and practices have been reflected upon the entire organization.

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*Delivered at the Sectional Meeting, Nebraska Section, American College of Surgeons, Omaha, February 3, 1930.

TREND TOWARDS STATE MEDICINE

The last ten years has seen a marked change in the practice of medicine. In many cases the ideals of service have been lost and the dominating motive in too many cases has been economic. The economic phase would not be open to excessive criticism if it were not too frequently accompanied by dishonesty in the matter of unnecessary examinations on part of the internist to justify a large examination fee and the tendency towards unnecessary surgery with the fee as the sole consideration. When the internist treats an abdominal tumor, palpable through the abdominal walls and in all probability malignant over a period of several months, or the surgeon who finds it necessary to refer all cases of simple appendicitis to the internist for a complete overhauling, there is only one explanation, namely, selfish financial motives.

These abuses plus incompetent surgery, which has existed for many years, are the fundamental causes for the lack of confidence by the laity in the entire field of recognized medicine and is rapidly driving us toward a condition of State Medicine. Unless we, as leaders of medicine and surgery, take the necessary steps to correct these abuses, the State will attempt to correct them for us.

Formerly, the industrial world functioned by sharp and questionable practices and the profession of medicine maintained its ethical position and the confidence of the laity by its high ideals and standards. At the present time the status of both groups are reversed. The business world has raised its standards, while those of the medical profession have been lowered. This statement does not apply to the profession as a whole, but to a large enough proportion of the profession to demand a recognition of facts.

FEE SPLITTING

The matter of the division of fees has been one of the chief causes in the dislodgement of the foundation stones of our ethics and ideals. The laborer is worthy of his hire beyond question and the physician who has the courage to charge what he conscientiously thinks his services are worth has little trouble. There is only one court, in my opinion, which can settle this matter and that is the court of public opinion. If the laity is satisfied with the fees of a physician or surgeon, that physician or surgeon will enjoy a satisfactory practice. The reverse is likewise true. The relationship between the internist and surgeon can not be controlled by law nor by rules and regulations of medical and surgical societies. It must be controlled by the conscience of the involved parties. If the patient is willing to pay his physician as much as the surgeon for an operation, it is no concern of the surgeons. If the patient refuses to pay his physician in proportion to the surgeon, then the physician must submit to the dictates of the court of highest appeal in medical matters.

The golden rule is the only safe guide to follow, namely; Do unto others as you would have others do unto you.

Any secrecy in the matter of fees is pernicious and is not countenanced by this organization. The internist can not fix the value of the surgeon's fees, neither can the surgeon fix the internist fee. However, the patient can decide the relative merits of the fees charged. I wish to think that the economic depression through which we have passed during the last ten years is largely responsible for the present conditions, and that with the easing of the financial drive we, as a profession, can again hold our banner aloft with pride.

The surgeon without ideals is very similar to a ship without a rudder. He may be rapidly carried along by the wind of popular acclaim for a short period of years but sooner or later the wind changes and he flounders in the rough sea of disillusionment and remorse. The same thought applies to surgical societies. We must have high ideals and constructive plans for the future, other wise we become functionless and the object of scorn.

The present harmonious solidarity of the Nebraska Section justifies at this time the adoption of a definite constructive program for the betterment of surgical conditions in Nebraska.

I wish to submit at this time for your consideration a plan which I believe to be both idealistic and constructive. The tremendous advance which has been made in the surgical field during *the past fifty years justifies a claim for special recognition of surgery. Surgery should be separated from the general field of medicine and placed in a distinctive field, the entre to which should be controlled by special preparation for the practice of the surgical art. Under the present legal regime the graduate of a recognized medical school is not only permitted to practice, but is protected in the practice of surgery for which he is not prepared. I would remind you that the therapeutics of internal medicine and of surgery are entirely different. No major operation is ever performed which leaves the patient in status quo (to borrow a legal phrase). The patient is either benefitted or is harmed. For this reason the right to practice major surgery should be granted only to those who are qualified.* At present all medical graduates may practice surgery.

The competent modern surgeon is one who exemplifies three basic characteristics:

1. Diagnostic ability. Unless a surgeon is a diagnostician it is perfectly obvious that he is no more than a mechanic and should be so classified. The only difference in professional equipment between the surgeon and internist should be in the therapeutic application of surgical diagnostic ability acquired in the general practice of medicine where the physician develops a knowledge of both the medical and surgical aspects of a case.

2. Surgical judgment. .This is the most important characteristic of a well rounded surgeon and is slowly acquired by careful observation, experience and practical deductions covering a period of years. To know what to do and what not to do, how far to go and when to stop, with the patient's welfare as the only objective, constitutes surgical judgment.

3. Operative technique, the minor of this triumverate of characteristics, is an art. Natural to some individuals, acquired by others. The ease and rapidity of handling the tissues of the body with consideration of the post operative effect constitutes art in the highest form. Many beautiful operators are poor surgeons, and many of the highest type surgeons are only mediocre operators. The only place for the operator in our prospective schemes would be as a unit in some clinical organization where he may function perfectly, but he should not go beyond the confines of that organization when public safety is considered.

The goal of medicine is acquired efficiency in rendering service to suffering humanity. Surgery is simply one form of therapy and this simple fact should constitute the only difference between the surgeon and the internist.

By taking the initiative in raising the standards of Surgery and eliminating incompetent surgery from the State of Nebraska, this organization has an opportunity to render a real constructive service to our State. This would necessitate the changing of the constitution of the State, removing the right of the graduate of medicine to practice major surgery until he had by special preparation become competent to safely operate for major conditions.

The first requirement should be a minimum of at least five years in the general practice of medicine or the equivalent thereto. This experience would fix in his mind the fundamentals of medicine, would eliminate a mass of theoretical ideas acquired in medical school, clarify the elements of disease, give him a practical contact with disease as a distinct entity rather than a theory. Teach him the human side of character, the value of suggestive therapeutics, the distinction between medical and surgical conditions, the value and limitation of drugs, the ability to adjust himself to the healing art, and finally and by far the most important a realization of how little he knows, which is the beginning of wisdom.

After five years experience in general practice, the individual should have acquired and developed a fairly good diagnostic ability and can view a patient as a complete unit rather than as suffering from a single disease, as viewed through the ultra specialist. During this period he has found himself and is better able to judge the specialty for which he is best fitted. Moreover, he has strengthened his financial position so that he may take the next step without great hardship.

The final step should be at least one year intensive training in surgical pathology, operative technique and post-operative treatment. This would not only teach him surgical procedure but would develop a self-control of his nervous system during an operation. It would teach him the rudiments of surgical judgment which will increase with personal experience.

Visualizing the future after the adoption of the afore outlined regime, we could expect the following results:

1. Those pertaining to the individual surgeon: Only those who were honestly interested in surgery as a service would take the necessary post-graduate training. This would eliminate that great army of good men who, after assisting in a few operations, feel competent to do their own surgery. The elimination of this possibility would in turn stimulate their interest and develop their ability in the management in medical cases and decrease the number of unnecessary and mutilating operations. This would markedly improve the general status of internal medicine.

The physician who qualifies as a surgeon would be infinitely better prepared to practice surgery than a majority of men who are operating at the present time. He would approach a surgical case with confidence and a knowledge that he could do creditable work and could eliminate the thought that he must experiment upon a number of patients before he could expect results.

2. The laity would soon realize that they could safely trust their welfare to the surgical profession in the matter of operations. This renewed confidence would

benefit the entire profession and would do much to eliminate the contention among medical men.

3. The benefits to the surgical profession would consist largely in the realization of a constructive advance in surgical procedure: a high standard of surgery unequaled in any other state in the Union. We, as an organization, would benefit by the knowledge that we had led in a movement for the improvement of surgical service to the people of Nebraska.

In closing, I wish to express my personal appreciation to the Nebraska Section for having made me their chairman for the past year. I feel that this is the highest honor which can be conferred upon a surgeon by the surgeons of Nebraska.

I am deeply grateful for the spirit of co-operation which has existed during the past year, for the advice and suggestions from the different officers and members of committees.

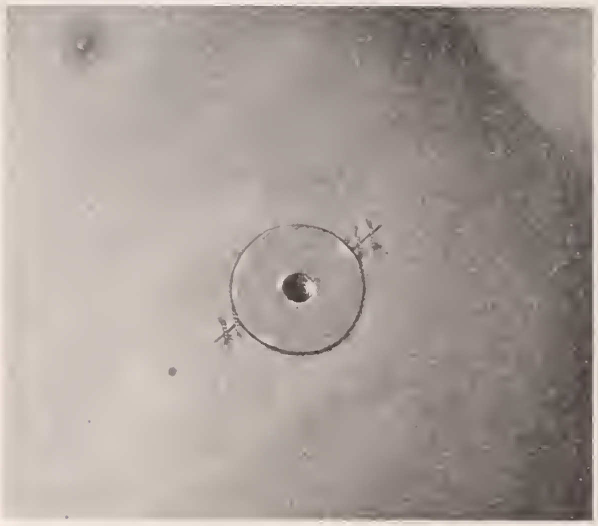
The personal contacts made and friendships engenedered will place me under lasting obligations to the Nebraska Section of the American College of Surgeons.

ACCESSORY MECHANICAL APPLIANCES FOR DRAINAGE OF EMPYEMA CAVITIES

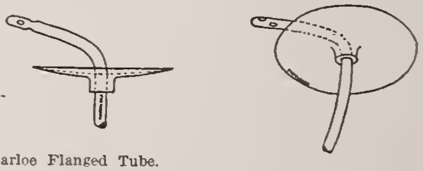
CLARENCE EMERSON, B. Sc., Ph. D. M. D., F. A. C. S.,
Lincoln, Nebr.

Sixth of a Series of Articles on Thoracic Surgery.

Many ingenious appliances have been advocated to facilitate thorough emptying of the empyema cavity and to encourage re-expansion of the lung. The principal object has been to construct systems of drainage having a continuous negative pressure or suction from the cavity. This result can be attained only if there is an air-tight connection between the drainage system and the chest wall. Such a provision is, of course, existent in the case of the ordinary closed drainage method in which a catheter has been introduced by means of a trocar into the pleural cavity under air-exclusion technic. After intercostal or transcostal thoracotomy special attention must be given to means of excluding air from the drainage system. This may be done by close fitting flanges about the drainage tube, which are made to adhere firmly to the chest wall by collodion or adhesive tape. Or a sufficiently large bell to enclose the drainage opening and tubes *in toto* may be firmly attached to the skin and connected with the negative pressure system. There may be incorporated into the drainage system a manometer and a control by means of which a precise degree of suction may be measured and maintained. In addition a provision for intermittent lavage of the pleural cavity may be made. The mechanical appliances that have been invented and used to accomplish these results have varied in complexity from a simple bottle of antiseptic solution into which the end of the drainage tube is led to very complicated hydraulic or motor induced suction. Some of the latter are feasable only in well equipped hospitals.



Simple Flanged Tube.



Wight-Harloe Flanged Tube.

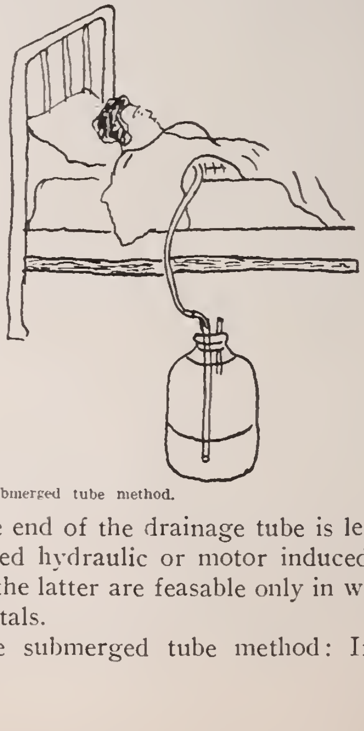


Fig. I. Submerged tube method.

A. The submerged tube method: If a long

tube leading from an empyema cavity terminates under the surface of an antiseptic solution in a bottle at the side of the bed, pus may find a free exit into the bottle, while at the same time the respiratory excursions cannot suck air back into the pleural cavity because the drainage tube is constantly filled with a column of fluid. A slight negative pressure is exerted with each inspiratory effort by the weight of the column of fluid in the tube. A modification of this apparatus is used for measurement of the expansile power of the lung. The drainage tube or cannula emerging from the empyema is connected by a tube to the graduated cylinder x (Fig. 2), at the top of which is a stopcock (s) and at the bottom a tube leading to a jar of water (d). The stopcock is closed and the cylinder and lower tube are full of water.

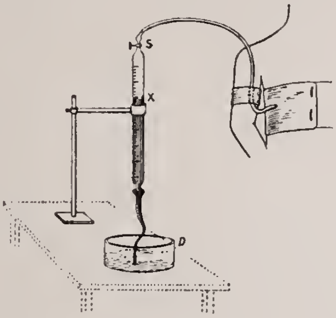


Fig. II. Mechanism to measure expansile power of lung.

Atmospheric pressure prevents the water leaving x as long as the stopcock s remains closed. Open s, and at once the water in the cylinder x falls, aspirating air from the empyema cavity as long as the lung continues to expand. Whenever the water in the cylinder rises and falls with the patient's inspiration and expiration, it shows that the lung has approached the chest-wall as closely as it can. The amount of air now in the cylinder (x) can be read on the graduated scale, and represents how much the empyema cavity has been diminished by long expansion. There is little advantage to this apparatus except the more continuous evacuation of pus. The movement of the patient and the pressure of dressings tend to interfere with this.

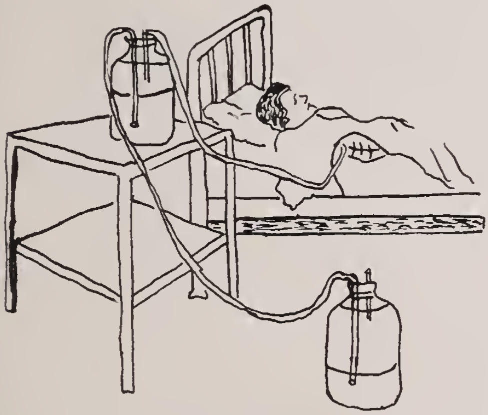


Fig. III. Two-bottle negative pressure apparatus.

B. Two bottle negative pressure apparatus: In this arrangement a continuous negative pressure is induced by the action of gravity. The same principle is employed as in the Young apparatus for drainage from the urinary bladder. The amount of negative pressure may be partially controlled by variation in the relative heights of the bottles. The advantages of this apparatus are that negative pressure is effectively produced and its simplicity permits it to be available anywhere.

C. Two bottle suction plus intermittent irrigation: Most surgeons now agree that periodic lavage is an important procedure in empyema. Especially is this true when it is remembered that Dakin's solution is an effective solvent of the fibrinous exudate that forms a corset-like capsule over the compressed lung. Therefore, any continuous suction method that lacks provision for intermittent lavage, fails to furnish useful adjunct in management of empyema. Suction technic by a two bottle apparatus with a lateral connection from the drainage tube through which intermittent flushing of the pleural cavity without disturbing the dressings was employed and recommended by the empyema commission of Camp Lee in 1918. They reported the results in a series of cases in which a continuous drainage system from an air tight thorocotomy was combined with repeated irrigations with Dakin's solution, by means of a T connection to the drainage tube. The method employed they described as follows: "In order to apply suction to the empyemic cav-

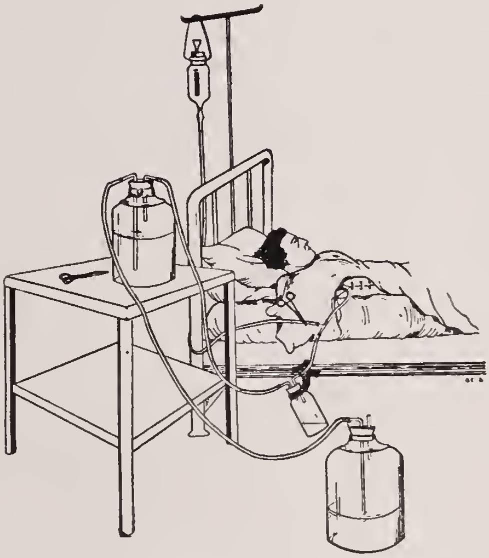


Fig. IV. Suction apparatus with T-connection permitting flushing of pleural cavity with Dakin's solution without disturbing dressings.

ity it is necessary to exclude air. This is done by passing the drainage tube through a small hole in a piece of rubber dam about 4 inches square, the edges of which, after packing the wound around the tube with gauze, are firmly attached to the skin with bread bands of adhesive plaster. The drainage tube should be long enough for convenient attachment to the rest of the apparatus by means of a T-tube of glass.

One branch of the T-tube is connected with a reservoir for Dakin's solution, the other to a pair of aspirating bottles, a small bottle intervening to collect the discharges. The connections are all made with rubber tubing, and, by alternately clamping and freeing these branches, it is possible to apply moderate suction or Dakin's solution at will.

The purposes served by this apparatus are:

1. The collection of the discharges in the bottle provided for their reception, thus obviating the necessity of changing the dressings.

2. Encouragement of expansion of the lung.

3. Early application of antiseptic treatment to the cavity after operation.

D. Apparatus for measurement and control of negative pressure: It is desirable to have an accurate measure of the suction power of the apparatus and to regulate the negative pressure under constantly changing conditions. As pus is evacuated into a two bottle system and as the water levels change the amount of negative pressure is altered. Especially when continuous suction through an electrically driven vacuum pump is obtained or if a hydraulic suction pump is used. it is necessary to prevent excessive suction within the pleural cavity. Sarah O'Brien and B. H. Caples. M. D., of New York, describe a regulatory manometer in the following manner: "A five gallon jug is fitted with a two holed rubber s stopper. In one hole is an L of glass tubing, the distal end of which is fitted with a short piece of stiff rubber tubing. The air is exhausted from the jug at this point by means of a large hand vacuum pump, one hundred strokes of which produce a vacuum capable of sustaining a column of mercury 500 millimeters in height. This rubber tubing is then clamped and the pump detached. The second hole of the stopper is fitted with a metal pin valve, obtained from an ethyl chloride tube, by which the rate of intake of air into the vacuum is regulated.

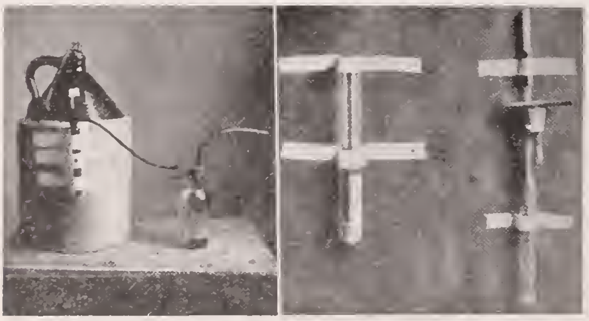


Fig. V. a. (at left) Vacuum apparatus and collecting bottle. b. Manometer in detail.

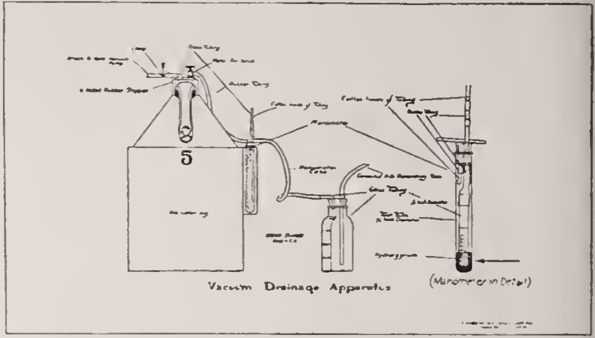


Fig. VI. O'Brien and Caples Regulatory Manometer.

To the distal end of the valve is fitted a piece of rubber tubing that connects with one of the lateral arms of the metal T tube which in turn connects by means of its vertical arm with the manometer that will be described later. From the other lateral arm of the T tube, rubber tubing runs to the short arm of a 400 cubic centimeter Wolff bottle, that is used as a collecting bottle, and to the long arm of which is attached rubber tubing with a lumen of one-fourth inch, that connects with the thoracotomy tube.

The manometer consists of a test tube three-fourths of an inch in diameter and 6 inches long fitted with a two-holed rubber stopper. Through one of these holes runs the short vertical arm of the metal T tube before mentioned, so that the negative pressure in the test tube is the same as that in the Wolff bottle and the chest cavity. Through the second hole of this rubber stopper runs a short piece of glass tubing, the lower end of which is fitted with a short piece of rubber tubing, which in turn is attached to a piece of glass tubing 4 inches long and 0.5 inch in diameter that reaches almost to the bottom of the test tube. The mercury is poured into the test tube to a height of about 1 inch immersing the lower portion of the inner tube.

The manometer is tested by attaching a simple U tube manometer, graduated in millimeters, to the distal arm of the metal T tube. The valve is opened slightly and as the negative pressure increases the mercury rises both in the test tube and the U manometer. At the same time the mercury is being drawn down in the inner tube of the manometer and when it reaches a given point, air is drawn in through the glass tube, bubbles through the mercury and slightly relieves the negative pressure. At the same time the mercury ceases to rise in the U manometer and the reading is made. If more negative pressure be desired, more mercury is poured into the test tube. If less, mercury may be poured out. Over the outer end of the manometer tube, that opens to the open air and over the inner end of the vertical arm of the metal T tube are fitted short pieces of rubber tubing into the other ends of which are fitted short pieces of glass tubing filled with cotton. The ends of these cotton tubes are almost closed, so that the cotton will not be pushed down into the mercury. The object of these cotton tubes is to prevent the loss of mercury by the violent bubbling of air through it due to either excessive positive or negative pressure.

When starting the drainage in a given case the pin valve is opened until the negative pressure is sufficient to cause occasional slight bubbling of air through the mercury and is then left at that point. If the jug be pumped every 12 hours the valve will seldom need readjustment, and a negative pressure of any desired degree may be maintained for any length of time.

For the first 2 or 3 days following thoracotomy a negative pressure of from 10 to 20 millimeters has been found to be sufficient. Later, especially in cases of partial lung collapse, it may be increased gradually to 40 to 50 millimeters. Not only is the cavity drained but gradual distention of the lung follows. Even though the patient does not complain, the appearance of traces of blood in the discharge, unless due to the manipulation of the tube, is an indication for reducing the negative pressure.

This method has been adopted in our empyema wards and in a series of 31 cases thus treated, there has been but one death and that in a case of bilateral empyema that had been operated upon 4 weeks before the negative pressure apparatus was applied and who had developed pneumothorax and a general sepsis. Of the other cases 8 have completely healed and are up and about the wards and show no symptoms of a reaccumulation of fluid after a period of several weeks. Five have such small cavities and so little drainage that the negative pressure has been discontinued. The other 17 are draining satisfactorily, have no pneumothorax and are all in good condition. The average total period of drainage where negative pressure was used from the time of operation has been 6 weeks.

The apparatus is portable, easily made, the part inexpensive, and it requires but a minimum of attention. Although by the use of Y tubes 2 or more cases may be drained by a single apparatus, it has been found more satisfactory to have a separate one for each patient.

A satisfactory vacuum pump may be made from a bicycle or automobile pump by simply reversing the plunger and valve.

E. Suction apparatus by hydraulic suction pump. (Synder method): A large bottle with a rubber cork containing three perforations is used as a negative pressure chamber and as a receptacle for aspirated fluid. Glass tubes are passed through two of the perforations in the cork, one tube reaching just through the cork and the second for some distance into the bottle. Through the third perforation an inlet tube having two valves is passed. The upper valve is automatic in action, working against a spiral spring. The tension of the spring may be varried by means of a thumb spring screw. The second valve placed below the spring valve may be used to cut off

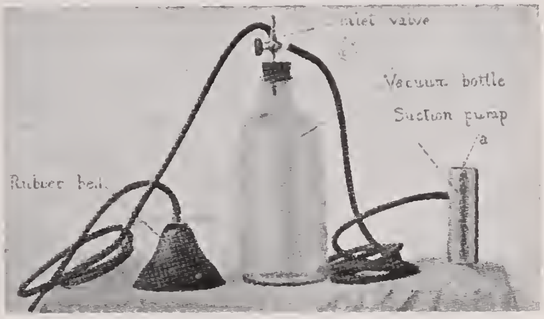


Fig. VII. Snyder Suction Apparatus.

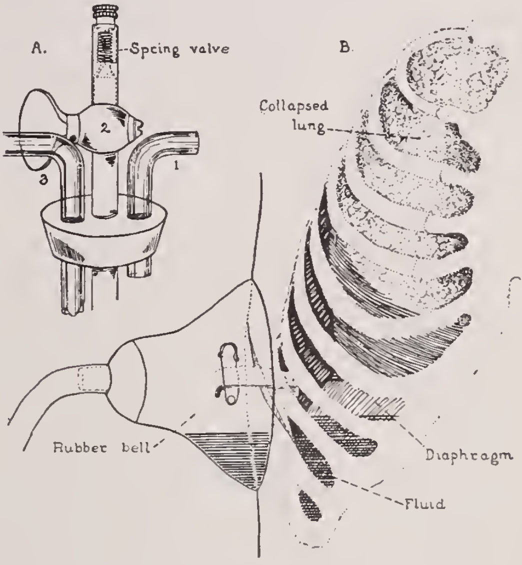


Fig. VIII. a, Detail of inlet valve; b, bell applied to thorax.

the inlet tube from the vacuum chamber when desired.

The third part of the apparatus is a soft rubber bell which is to be applied to the chest. Such a bell can be easily made from a suction device used by plumbers by removing the handle from the apparatus and drilling a hole through the base of the bell into which a tube is fitted. It is also of advantage to thin down the edges of the bell slightly to increase its flexibility.

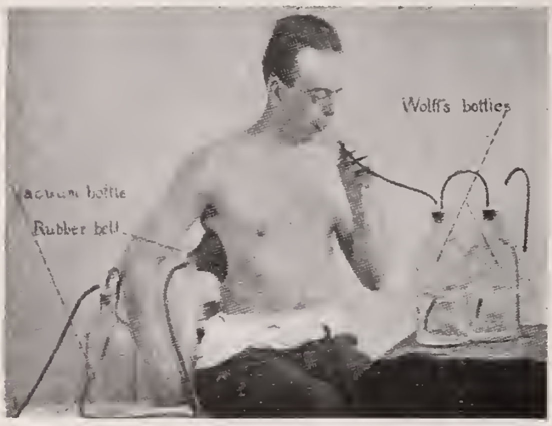


Fig. IX. Same employed in conjunction with Wolff's bottles.

The apparatus is assembled by connecting the suction pump to the shorter tube in the bottle and by connecting the longer tube to the bell by means of rubber tubing. When ready to use, the pump is attached to any convenient water faucet and the water turned on. The bell is held for a few seconds against the chest wall covering the thoracotomy incision and drainage tubes. The suction is sufficient to maintain the bell in contact with the chest wall without additional support. It is flexible enough to adapt tself to any surface adhering closely either to an angular or to a rounded type chest.

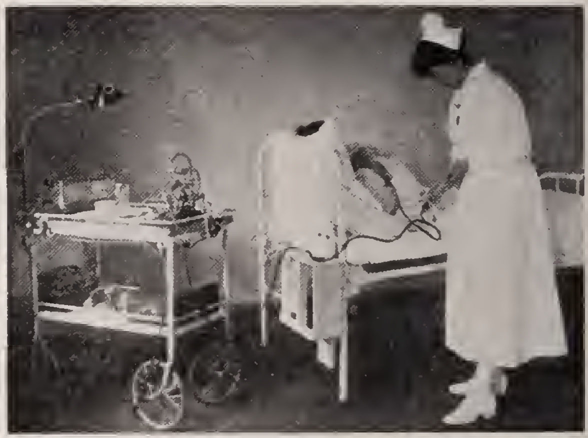
The degree of negative pressure maintained may be regulated by varying the tension of the spring valve in the inlet tube, for whenever the vacuum exceeds the tension at which the spring is set, air will be admitted to the vacuum bottle. If desired the valve may be standardized against a column of mercury. The rapidity of flow of the water through the suction pump may also be used to regulate the degree of negative pressure.

Patients do not complain of pain with judicious application of the apparatus. The use of "Wolff blow bottles" while the apparatus is in place, is of aid in expanding the lung of the affected side. Pus and retained secretions are very readily evacuated from the chest cavity. Intermittent irrigation of empyema cavities with Dakin's solution may be employed in all cases in conjunction with the use of this apparatus.

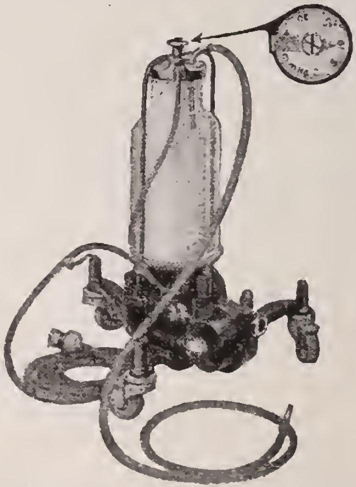
This method requires proximity to a water faucet and is adaptable only in modern hospital rooms. A simpler and less cumbersome rubber flange such as that devised by wright and Harloe may be substituted for the rubber bell described above.

Almost complete removal of dressings and disconnecting of apparatus is necessary to carry out the intermittent lavage with Dakin's solution, but if the Wright-Harloe flanged tube is used an intermittent drainage line may be added to this apparatus.

The electric and hydraulic systems of inducing negative pressure are not universally available or convenient. The two-bottle gravity method combined with a side line that is intermittently clamped and released for irrigation and with a manometer of the mercury or spring type, combines all of the essentials with convenience and availability.



Electric Vacuum Pump for aspiration attached to an empyema cart.



The Lovac—A small silent electric motor unit for continuous suction under negative pressure control of 5 to 40 units of mercury.

F. Electric motor driven vacuum pump: A more complicated but efficient and *de-luxe* method of inducing negative pressure is by means of the electric motor. This apparatus is probably more practical for use temporarily in the same manner, and under the same conditions, as the hand vacuum pump is used, that is for intermittent aspiration. It may be used continuously if combined with a spring inlet valve, such as is employed in the Snyder apparatus or with a mercury manometer to properly regulate the degree of suction.

DISSOCIATION OF SENSATION

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The testing for abnormalities of sensation requires more time and patience on the part of both the examiner and the patient than any other neurological procedure and as a result it is in the routine of general practice frequently not done at all or not done well. Still the demonstration of a sensory abnormality, as a dissociated anesthesia, may be as momentous for diagnosis as the discovery of a Babinski reflex. But to avoid exhausting the patient the examination must not be prolonged beyond the requirements of accuracy. And it is often of advantage to begin the neurological examinatiion with the testing of sensation.

Dissociation of sensation occurs with various nervous affections and different sensory qualities are lost in different diseases. The classical form is that observed in syringomyelia, a chronic disease of the cord and the medulla. This disease begins frequently with the filling of the central canal of the cord with glia cells, this new growth later to break down and to become absorbed and thereby to lead to the formation of a cavity in the center of the cord, a tube or syrinx. This process brings about an interruption of the fibres which carry pain and temperature impulses and which cross over in the spinal gray in the neighborhood of the central canal while the other impulses travel upward over the posterior columns.

As the result of this lesion the patient loses the ability to feel thermal stimuli and pain, but not the sense of simple touch. These patients frequently get burned or scalded severely without feeling it. One of my patients picked up a poker not knowing that it was almost red hot and only when seeing a little smoke rising up from her hand did she know what she had done.

If the pathological process invades the anterior horns it gradually destroys the motor cells and also frequently the sympathetic nuclei. This extension of the process takes place gradually and conditions the gradual unfolding of the clinical picture, when to its sensory symptoms are added muscular atrophies and paralysis and various trophic and visceral disturbances.

Jacob A., 50 years of age, an upholsterer by trade, married and father of six children, came to Creighton Dispensary complaining of severe pain in his left shoulder. In 1919 he had had an attack of influenza. Although quite ill he could not take care of himself as his wife and children were even in worse condition. About 6 or 8 months later he fell off a ladder but was apparently not seriously hurt. A few months after this accident he began to have pain in his left shoulder. These resembled his present pains but disappeared after a few months. In 1922 he had a similar attack lasting several weeks which was treated as rheumatism. In the fall of 1925 the present attack began. The pain was severe and neuralgic in character, and although treated by several physicians and a few osteopaths, has persisted for over a year with several intermissions.

The notes made at the first examination show that with the exception of a mild secondary anemia his physical condition was good. Wassermann of the blood serum negative. The tendon reflexes were normal although the knee jerks seemed rather brisk, the left perhaps a little more than the right. Pupils, gait and station were normal. Sensation was not tested further than to elicit tenderness on palpation of the musculo-spiral and supra-scapular nerves. A tentative diagnosis of "neuritis" was made and the patient given a remedy. Although on his return two weeks later he reported some improvement, a more detailed examination was made including a careful test of sensation. This revealed an area of complete anesthesia to pain and heat involving the entire shoulder and extending downward to the middle of the arm, and upward into the neck.

About a year later the patient came to the office. The pain in his shoulder and arm had left but he complained of weakness and clumsiness in his left hand. Examination showed definite atrophy of the small muscles of the hand of the type of progressive spinal muscular atrophy described by Aran-Duchenne, but in the latter disease there are no sensory symptoms. This atrophy involved the thenar and hypothenar eminences, the interossei and lumbricals. In addition there was definite fibrillary twitching of the deltoid, supra- and infra-spinatus and trapezius muscles. The affected muscles of the shoulder girdle showed partial reaction of degeneration. The Babinski sign was present on the left side. The sensory findings were of the same type as the year before. This patient also presented vasomotor and trophic disturbances. The finger nails of the left hand showed definite clubbing and the skin over the dorsum had lost its hair, was shiny and thin.

The spinal fluid was negative to all tests. A diagnosis of Syringomyelia was made as soon as the patient's sensation had been carefully tested on his second visit at the Clinic and was confirmed by the further development of the case, i. e., the appearance of muscular atrophy and trophic disturbances.

The diagnosis in the next case was not definitely made until the appearance of sensory symptoms.

C. A., a merchant, 52 years of age, contracted lues at 30 years of age and was treated with Hg for 3 years. He never showed symptoms of the second stage. About 10 years ago he had neuralgic pains in his shoulder and arms. He had a seizure of some kind which left him unconscious for 2 or 4 hours. He thinks it left him with a temporary weakness of the right arm and leg. Gradually the 4th and 5th fingers of the right hand became numb and weak. He went to Rochester where he was given a course of salvarsan and mercury and had some badly infected tonsils removed.

At about this time Dr. A. D. Dunn, his physician, discovered some atrophy of the small muscles of the right hand and kindly referred him for an examination. The hypothenar eminence showed marked flattening, the adductor of the thumb was atrophic and the affected muscles showed fibrillary tremor. The deltoid also showed fibrillation. The case at this time looked like one of progressive muscular atrophy, but about 1½ years later the patient presented a definite dissociation of sensation of the type seen in Syringomyelia. Both hands were anesthetic to pain and temperature as were also the right arm and forearm tho in a less degree. The anterior surface of the chest and abdomen showed the same dissociation. There was no Babinski sign but the right plantar reflex was stronger than the left.

The diagnosis of a cavity formation in the spinal gray was undoubtedly justified.

In the treatment of syringomyelia the x-ray was used first as long ago as 1905 by Raymond in France and a year later by Gramegna in Italy. Since then a growing number of workers have published reports of improvement with this treatment. The following improvement may be expected: Muscular weakness is lessened, atrophy arrested, the muscles which have retained their electrical reactions may become again almost normal. Trophic changes show more marked improvement than the sensory changes, while the patient experiences an increased feeling of well being.

Sensory dissociation of the type seen in syringomyelia may also occur in cord tumors, spinal syphilis, and other conditions.

A sensory dissociation of quite the opposite type is seen in tabes or tabo-paresis, i. e., paresis with tabetic symptoms due to dorsal column involvement. A man of about 51 years with a spinal fluid giving a paretic curve has complete anesthesia to light touch over the penis and middle portion of his chest while he is able to distinguish painful and thermic stimulis in both these regions. This, as is well known, is due to the fact that in most persons the posterior columns of the cord carry impulse of light touch as well as deep, that is, joint-muscle sensibility.

However in the presence of other more evident symptoms the study of sensation in tabes and paresis is of lessor importance.

An extremely interesting and dramatic dissociation of sensation is seen at times in hysteria. Sensibility to pain is frequently greatly diminished, thermoesthesia less and over a smaller area while tactile sensibility is retained. Often the capricious nature of the distribution of the sensory changes, or their extreme variability from day to day help to raise the suspicion of hysteria. We may find complete hemianaesthesia one day, normal sensibility on the next. The analgesia is at times so complete that it is possible to pick up a fairly good sized fold of the skin and transfix it with a rather course needle without causing any evidence of pain.

Babinski claims that these symptoms in hysteria are due to suggestion, i. e., the physician in examining the patient has carelessly let him know that he suspects anesthesia. This is true at times but there are undoubtedly cases where actual anesthesia exists.

A few months ago a patient was seen who was subject to neuralgic pains over the right side of his chest resembling intercostal neuralgia. There were no tender spots as are usually found along the course of the intercostal nerves, but the area corresponding to the 5th and 6th dorsal segments was entirely anesthetic. Further questioning brought out that at the time when these pains began he had about a dozen or more small vesicles which "broke" and healed in about two weeks, a fact which he had failed to remember. In this case testing the patient's sensation helped to establish the previous herpes zoster.

In making an investigation of sensation the room should be quiet, the patient's eyes should be closed or better, some object interposed between his eyes and the part of his body being tested. Each variety of sensation is tested separately and it is useful to mark on the skin the abnormal areas. In mapping out anesthetic areas begin with the anesthetic area and work toward the normal skin as it is easier for the patient to recognize the moment when he first feels a sensation, than when he first loses it. In hyperesthesia we work from the normal to the hyperesthetic area. One can at times succeed in mapping out areas of slightly diminished sensation more accurately by asking the patient to gently pass his forefinger over the affected area indicating when he notices a difference in feeling. Recently, in an intelligent farmer, I was enabled to map out accurately an area of slight anesthesia of segmentary distribution involving the

2nd, 3rd, and 4th dorsal segments when the examination with cotton failed to definitely determine the anesthetic area.

Tell the patient to say "Yes" whenever he feels any sensation of touch, and then tell the location and nature of the sensation. Never ask him "Do you feel that?" Such questions may act suggestively.

THE SCIENCE OF NUTRITION AND ITS APPLICATION TO CLINICAL MEDICINE*

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INTRODUCTION

A distinguished physician, who made a reputation for himself in the diagnosis and treatment of tuberculosis, once took a visitor through his sanitarium. Turning to the kitchen, the doctor exclaimed with great pride: "This, sir, is my pharmacy." This pithy utterance reveals our present conception of the therapeutic value of diet and emphasizes the importance of the dietetic department in the modern hospital.

In the last twenty-five years progress in treatment has followed diverging paths. One path has led to the use of substances extremely toxic and foreign to the human body. Examples of such substances are numerous. Among them may be mentioned alkaloids, coal tar products, organic dyes, gold, radium, mercury, arsenic, bismuth, and colloidal lead. Much was formerly expected of chemotherapy. Each new drug, such as salvarsan or mercurochrome, has been heralded as a marvel in the direction of cure. As time goes on, however, the enthusiasm of the early moments loses some of its exaggerative qualities, and the new drug takes its rightful place among the list of remedial agents at the command of the clinician.

Side by side with the artificial era in therapy we have with us the natural era, which follows the path leading to a sincere and honest attempt to imitate the natural ways in which the biologic organism functions. The trend towards natural proceedings for maintaining health, curing, or preventing disease has brought about a wider use of and greater respect for the recuperating value of rest, for mechanotherapy, for heat therapy, for light therapy, for immunotherapy, for hydrotherapy, and for dietotherapy.

We are living today in an age replete with wonders. Formerly it took a science several centuries in the making; today a whole science takes firm root, blooms, and bears fruit in but little more than a dozen years. In 1910 very little was known about food except calories and a few things about proteins. In that year all the known knowledge pertaining to food could be conveniently covered in two or three lectures. The various medical and scientific journals rarely carried an article pertaining to nutrition. Today the science has grown so big, the literature has become so voluminous, and the discoveries so numerous, that even a deep student of the subject has a difficult time in keeping up.

Some one has said that the greatest value of science lies in its usefulness to mankind. This truth finds ample expression in the field of experimental nutrition. In no other field of scientific endeavor is the newer knowledge so immediately applicable and so permanently beneficial to the human race.

OUR PRESENT CONCEPTION OF THE ADEQUATE DIET

Let us briefly review the advances in the science of nutrition and its application to medicine. In the first place we have at present a clearer and more definite idea of what constitutes an adequate or well balanced diet. When the physician or surgeon makes a demand upon the dietitian for a building-up diet, he is certain that his patient will get it. We used to praise calories unto the seventh heaven. Now we realize that a little knowledge is very dangerous. Besides the calorie-producing foods, we need those possessing no energy value, but nevertheless indispensable for the proper maintenance of the biologic organism.

A well balanced diet, adequate quantitatively and qualitatively, must have the following nutritional factors:

1. Protein, of sufficient quality to furnish for the adult two-thirds to one gram per kilo of body weight, and for the child one and a half to three and a half grams per kilo of body weight; and of superior quality with reference to the presence of such indispensable amino acids as cystine, tryptophane, lysine, etc.

2. Carbohydrate, of the digestible type to furnish energy to help in the burning of fat and to

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spare protein; and of the indigestible type, such as cellulose and agar, to furnish residue for proper peristalsis in the intestinal tract.

3. Fat, of a quantity in relation to carbohydrate to insure a ratio of not more than 4 to 1; and of superior type, that is vitamin-bearing, such as the fat in egg yolk or the fat in milk, butter and cream.

4. Oxygen, supplied by the respiratory tract, of sufficient quantity to oxidize the protein, fat, and carbohydrate ingested.

5. Water, of sufficient quantity to allow for lubrication of opposing surfaces (oral cavity, joints, pleura, pericardium, amniotic fluid); to allow for the production of secretions and excretions, such as digestive fluids, milk, spinal fluid, urine, perspiration; to allow for the production of a fluid like blood; to allow for the process of digestion, assimilation and oxidation; to allow for the regulation of heat by the removal of water through the kidney, lung, and skin; to allow for the regulation of osmotic pressure through the proper concentration of salts in the blood and tissues.

In order to satisfy our daily water requirement we need twelve glasses of water a day. Six of these come from the water content in our food and six should come from water itself.

6. Inorganic or mineral components, to build and repair tissue; to assist in maintaining the normal relations with reference to osmotic pressure, the normal contractility of the muscular system, and the normal irritability of the nervous system; to assist in maintaining the hydrogen ions of the body in concentractions compatible with life; to furnish the acids and alkalies of the digestive secretions; to aid in holding insoluble substances, like uric acid, in solution in the body fluids; to aid in such special processes as coagulation, which requires calcium ions, the building of hemoglobin which requires iron, copper or manganese, and the production of such hormone as thyroxin, which requires iodine.

We know at present enough about the nutritional requirements of the more important inorganic elements to indicate the daily quantity to be ingested. The daily calcium intake should be 750 milligrams for adults and 1000 milligrams for growing children and for pregnant and lactating women. The phosphorus intake should be 1320 milligrams for the adult and 1500 milligrams for children and for women during the period of pregnancy as well as during the period of lactation. The daily iron intake has been placed at 15 milligrams. In conditions of anemia and during pregnancy the iron intake should be increased to 20 or 25 milligrams. Iodine in quantities of 0.04 milligram is sufficient for the daily intake. This minute amount can never bring an individual into the danger of over-iodization.

The A-P or anemia-preventing factor discovered by Whipple and Robscheit-Robbins is an iron-free substance found in certain foods, capable of regenerating hemoglobin and red cells, and therefore efficient in the treatment and prevention of the mild and severe forms of anemia. Foods known at present to be abundant in A-P factor are liver, kidney, chicken gizzard, eggs, whole wheat, peaches, apples, apricots and prunes. This anemia-preventing factor or anemia-curing factor is at present believed to be copper. Manganese also has curative and preventive properties with respect to anemia.

7. Vitamins, of which there are two types. One type consists of water-soluble vitamins. These are the anti-beriberi vitamin, the anti-scurvy vitamin, and the anti-pellagra vitamin. The other type is made up of fat-soluble vitamins. These are the anti-ophthalmia vitamin, the anti-rickets vitamin, and the anti-sterility vitamin. From a present survey of the research field it appears that several new vitamins are to be announced in the near future.

8. Sunlight, which nutritionists consider as part of the adequate diet. Without it the human being does not maintain himself in good health, gastric acidity is low, appetite is diminished, food is not assimilated, and there is a strong tendency to anemia, infantile tetany, rickets, osteomalacia, and tuberculosis.

THE DEFICIENCY DISEASES KNOWN AT PRESENT

In 1912 we knew definitely of one deficiency disease, and that was beriberi. It was research in connection with beriberi (vitamin B* deficiency) that led to the discovery of the first vitamin. Today we fully recognize many more deficiency diseases: Scurvy (vitamin C deficiency), infantile tetany or rickets (vitamin D deficiency), xerophthalmia (vitamin A deficiency), pellagra (deficiency in vitamin F or in anti-pellagra vitamin), sterility (vitamin E deficiency), dehydration fever (water deficiency), ketosis (carbohydrate deficiency), simple or endemic goiter (iodine deficiency), chlorosis (iron deficiency), war, famine or hunger edema (deficiency in superior pro-

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*The vitamin concerned with beriberi, known as vitamin B, has been broken up into two nutritional factors. One cures beriberi and the other pellagra. The writer retains the term vitamin B for the anti-beriberi vitamin and vitamin F for the anti-pellagra vitamin.

tein). Our newest member elected to the group of deficiency diseases is pernicious anemia. The work of Whipple and Robscheit-Robbins and of Minot and Murphy, is very suggestive of the nutritional deficiency that is the etiological factor in this condition. Sprue, which is very much like pernicious anemia, is also recognized as a deficiency disease, and its treatment through diet is regarded as the only therapeutic procedure of any worth. There is no doubt in the mind of the writer that muscular dystrophy and various types of purpura will soon be included in the deficiency diseases.

It must be said that with the exception of rickets and of pellagra in the southern states and sprue in the West Indies, there are comparatively few cases of well developed deficiency diseases in America. But for every such case there are hundreds of thousands of cases of incipient and hardly recognized types and degrees of malnutrition—all benefited by a more inclusive diet.

THE PLACE OF NUTRITION IN THE PREVENTION AND TREATMENT OF INFECTION

The clinician, with the aid of the expert dietitian, can do more than prevent or cure deficiency diseases. If that were the only contribution of the science of nutrition, the dietetic laboratory and the diet kitchen would still deserve a place in every modern well-regulated hospital. Malnutrition is at present the most common biological error among the young and adult. The result of malnutrition is loss of physical vigor, decrease in the power of resistance against invasion by the lower forms of life parasitic to the human being, and consequently an increased tendency to infection. Diet is, therefore, a very important therapeutic measure in pre-operative and post-operative treatment, during acute and chronic infection, and during the period of convalescence.

THE PLACE OF NUTRITION IN THE TREATMENT OF METABOLIC DISEASE

So far we have mentioned the relation of diet to the specific nutritional diseases, the so-called deficiency diseases, and those pathological conditions in which building up the patient is of great benefit. We shall now point out that diet plays an important role in the diseases characterized by some failure in the functioning processes. The aim of the dietary treatment is to take the load off the damaged organ. In diabetes, the pancreatic islands of Langerhans do not produce enough insulin, a hormone necessary in the complete burning of sugar. We regulate the carbohydrate intake so that no extra load is put upon this damaged organ. In certain forms of nephritis, a low protein or low chloride diet is given in order to allow the damaged kidney to handle no more than its limited functions would allow. In obstructive jaundice, bile is not delivered into the intestines, fat is very poorly digested. We accordingly restrict the fat intake so as not to allow the intestinal tract to be clogged up with undigested fat, which would stand in the way of the digestion and absorption of other nutrients.

Diseases of the heart, liver, and the gastro-intestinal tract also call for dietetic intervention. Underweight, obesity, anemia, and chronic constipation are also amenable to dietary treatment.

SOME FAMOUS DIETS

Before closing it would not be out of place to mention some famous diets that have been developed in the attempt to arrive at proper dietetic treatment. Among them may be mentioned the Sippy, the Smithies, the Alvarez, and the Coleman diet for gastric and duodenal ulcer, the Coleman diet for typhoid and other infectious fevers, the Marsh and Newburgh diet for diabetes, the Peterman diet for essential or idiopathic epilepsy, which is now also being applied in chorea and in migraine, and the Minot and Murphy diet for pernicious anemia.

RATIONALIZING TREATMENT THROUGH NUTRITION

The influence of the nutritionist is growing. His work has also found its way into practical medicine through channels other than the diet kitchen. This is exemplified in the widespread use in treatment of glucose solutions and of isotonic and of hypertonic salt solutions. Nutrition has been a great aid in rationalizing treatment. Thus we no longer combat the acidosis of diabetic coma with sodium bicarbonate but with insulin and glucose. We treat most effectively with glucose symptoms of hypoglycemia occurring in insulin poisoning or in the toxemias of pregnancy or in post-operative conditions. We combat gastric hypoacidity with the food acids to be found in lemons, oranges and grapefruit. We treat epistaxis or hematuria occurring in the course of scurvy not with substances capable of hastening blood coagulation or constricting blood vessels with clamps or packing, but with the anti-scurvy vitamin. We treat tuberculous lesions of the skin not with ointments, but by recommending an adequate intake of calcium, phosphorus, vitamin D, and sufficient exposure to sunlight in the summer and ultra violet rays in winter.

The dietitian in the hospital is also growing in importance year by year. This growth is but natural, for it indicates a wholesome attempt on the part of the clinician to keep pace with the rapidly developing field of nutritional therapy.

FUNGOUS DISEASES OF THE LUNG*

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Disease producing organisms among the higher fungi are not so numerous as the bacterial forms, and are, therefore, probably more frequently overlooked. There seems to be a good deal of confusion as to terminology and classification, but for our purposes we may accept three subgroups of these fungi.

First, diseases caused by the streptothrix forms which more closely resemble bacteria, in fact, it is thought by some that they may be related to tubercle bacilli and diphtheria bacilli either of which sometimes show branching. Of these, the most important human example is the actinomyces or ray fungus. It is more common in animals. causing lump jaw. The organism is thought to be saprophytic, growing upon grain and grass, *etcetera*. When introduced into the tissues it becomes an irritating infection, commonest around the mouth, but has been found in the region of the appendix and cecum. Commonly the disease remains more or less local, but may spread by continuity of tissue and may become quite generalized. The lung may be invaded. It causes moist granulation tissue with pockets of pus and general purulent infiltration in which are small colonies of the fungus with the characteristic radiating clubbed ends.

The second group are due to yeast like forms called blastomyces. These are more common in America than elsewhere. As a rule the infection is confined to the skin, but may become generalized and the lungs may especially be involved.

Third, the highest group of fungi or the hyphomycetes contain a number of species pathogenic for man. As a rule these fungi are only ectoparasitic of the skin, but may be very obstinate to deal with and the lesions are subject to secondary infection. More rarely they may invade the deeper organs, especially the lungs, and give rise to a very serious infection. These lung mycoses are almost always due to a species of aspergillus.

This is too large a subject to be covered in the time allowed. It would have been easier to have discussed one particular type of fungus and the infection by it. The larger subject was selected to cover a report of several cases which have come under my observation and care during the past year, namely:

Case 1. J. B., man, age 24, reported in August 20, 1928, complaining first of a cold in the chest, with very severe and frequent coughing spells easily productive of a more or less profuse gray sputum. This had been present for a week or more. Second, loss of weight of 10 pounds over a few weeks' period. He was inclined to underweight and was 15 pounds underweight at this time. Third, he did not eat well and looked somewhat emaciated and quite suggestive of tuberculosis. He had lost no time from work. He, as well as his mother and grandmother, had been patients of mine for years, but the young man had been working in other states for a year and had just been transferred here from Missouri. His occupation was assistant in the Weather Bureau office. No history of exposure to infection was obtained. Upon examination the temperature and pulse were normal, a catarrhal condition of nose and throat was present, but nothing particularly marked. The chest at first presented a few rales as with a fresh cold. Posteriorly below the angle of the scapulae the breath tones were not readily heard, but the areas were shifty.

He was put on thorough elimination and alkalinization. The nose and throat painted with mercurochrome daily and the zoalite used to face and chest for one-half hour daily and followed with cold pack. He was given anacin and a cough syrup to take at home. A specimen of the sputum was examined within a few days and found to contain an almost pure culture of aspergillus fumigatus. Later specimens showed also aspergillus flavus. The x-ray was negative except for involvement of the bronchial tree. The engorgement of the lymphatics extended downward from the hilus of the lung toward the diaphragm rather than upward. (It was suggested this thickening might be due to sinus infection).

The cold was promptly relieved with gradual clearing up. In two weeks the patient was put on sodium salicylate and in a few days the sputum became quite yellow for a short time, probably due to the aspergillus flavus. He was then put on increasing doses of potassium iodide beginning with ten drops three times a day and increasing five drops every few days till 25 drops had been taken for several weeks when he was taken off for a week and then returned to 25 drops three times a day for two weeks out of three. He was also given ultraviolet radiation first daily in increasing dosage, then every other day, then bi-weekly, the whole course extending over a period of three to four weeks. Then a few high frequency treatments were given over the sinuses. During this time he had been on tonics, digestants, force feeding and enforced rest as much as possible while working. He had gained 17 pounds in weight, felt fine, was practically free from cough. He was dismissed but advised to stay on I, Q and S, bile salts and alkalis for some time and then taper off on these. Mistol was given for the nose and he was asked to take a cold pack to face and whole chest every day immediately upon arising and asked to check in from time to time. Up to the present time there has been no recurrence of symptoms. He has recently again left the city.

Case 2. Mrs. N. H., had just returned from a trip to Niagara Falls. While under the Falls she received a severe wetting from the knees down and was unable to change to dry clothes for some time. She immediately noticed a cold and sore throat. The throat was quite painful and reddened for several days, but was better by the time she reached home though still somewhat sore off and on. She arrived home on Friday, but did not call until Sunday evening. She had been having chills and fever since morning and appeared very ill—temperature 104, pulse 120, restless and moaning. Lungs were still clear, she had some cough, but thought it was from the throat. The patient was taken to the hospital immediately and everything possible done to prevent pneumonia. The blood count showed a low white cell count, 4000 and only 40% polys. Salts, pyramidon, alkalis, inhalations were used and the temperature and pulse came down to normal in a few days, and the patient felt better, but still complained of sore throat at times and of chills. She dreaded her bath for fear of these following it as they usually did. The slightest exposure would have the same result. The throat smear was cultured, but reported negative. Frequently the temperature would go up to 102 or 103. The patient was dissatisfied at the hospital and was allowed to go home under the care of a special nurse. A blood count on leaving hospital showed white cells 6000 and polys 12%. While still at the hospital she complained of painful hemorrhoids. Treatment was given and they improved only to become very painful again. This condition grew steadily worse while at home in spite of any medication. Plenty of consultation was had and it was decided to take her back to the hospital for a hemorrhoidectomy. The hemorrhoid was nearly sloughed off. The patient's reaction to the anesthetic was bad and for several days her condition was very poor, but gradually improved somewhat. She complained of sore tongue and mouth and gradually developed grayish ulcers in the throat and mouth. Sometimes we thought the mucous membranes were much improved and at others much worse. While the patient was at home we managed to obtain two specimens of sputum which my colleague, Dr. O'Sullivan examined. In the first specimen, colorless, foamy and lumpy, she found an almost pure culture of probably micrococus tetragenus, gram positive and non acid fast. She noted that the pus cells were conspicuous by their absence. In the second specimen, colorless with whitish plugs, again there was a total absence of pus cells. There were mixed bacteria and the following fungi were found fairly numerous:

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*Read before Nebraska Association of Medical Women, Omaha, Nov. 2, 1929.

1. Monilia albicans or thrush fungus.
2. Aspergillus.
3. Mucor niger or black mould.

When the patient was returned to the hospital the polymorphonuclears were down to 8%. This gradually went down to none. The site of the hemorrhoid was a large ulcer nonhealing and with almost gangrenous appearing edges. The mucous membranes of the mouth were covered with ulcers with grayish exudate. There was little and only temporary response to any treatment though every reasonable thing was tried. None of my consultants could offer any suggestion for treatment except possibly transfusion. I had no reason to hope for results from this proceedure and it was not followed. After four or five weeks the patient died.

The diagnosis when first in the hospital was influenza. but as the agranulocytosis increased and the mucous membrane became more involved we were forced to the diagnosis of agranulocytic angina of a more chronic form than usual. Other cases are on record of this condition complicating or following influenza.

I will not go into further discussion of the condition as diagnosed, but wish to call attention to the presence of the fungi of several types. If our laboratory examinations were made more extensive rather than for acid fast organisms only we might find these fungus complications fairly common. Nor do we know how much a part this complication may have contributed to the final fatal outcome. The specimen of sputum was fresh and so it could not be contamination.

Case 3. J. P., male, car repairer for Union Pacific, came in July 12, 1929, complaining of (1) weakness, (2) sleeplessness, (3) attacks of asthma over a period of 15 years or more, (4) drowsy spells before these attacks, (5) loss of "pep", (6) throat dry before these attacks, (7) lost 12 pounds in six weeks and was 20 pounds underweight, (8) coughing and sneezing with expectoration. The patient, who was only 35 years, had an anxious, drawn, old look. The muscles of the chest had been worked into knotty ridges in his efforts at breathing. He had worked very little since January. In the past 15 years he had had many doctors and had also been to Colorado, but continued to have his attacks oftener, longer and more severe. Blood count was normal except white cells 11,000; stomach analysis showed normal findings. No examination of the sputum had been made previous to this time. The sputum on several tests disclosed no acid fast organisms. The first specimen was transparent, mucoid, with brown and black clumps and yellow strands; microscopically it showed actinomyces and fairly numerous spirochetes and some fusiform bacilli and pneumonocci. Slides of the throat showed many spirochetes. The examination of the chest disclosed rales of all sorts and descriptions over every inch of the chest. The x-ray of the chest showed thickening of the glands of the hili on both sides and extending upward with a suspicion of parenchymal involvement on either side suggestive of early tuberculosis.

Treatment consisted of corrected health habits, such as plenty of fluids, free elimination, also bile salts, alkalinization and digestants. He was subjectively conscious of improvement almost immediately. As soon as the diagnosis of actinomycosis and of fusospirochetosos was made he was put on rapidly increasing doses of potassium iodide for three weeks and then on 25 drops three times daily, two out of three weeks. The nose and throat were painted first with a solution of neo-arsphenamine every day or two and then followed up for a few weeks with a 50% peroxide gargle two or three times a day at home.

Ultraviolet treatment was given in increasing dosage at first daily, then every other day, then twice weekly. Gradual increasing exercise was given and forced diet. There was a gradual but very decided improvement in all symptoms and the man was allowed to go back to his work in less than three weeks from the date when first seen and he has worked ever since except when laid off for a cold. The chest gradually became free from rales, the cough subsided as well as the expectoration. The patient had gained some every time he came into the office. When last seen it was hard to recognize the original patient in the alert, happy, smiling man.

Case 1 represents a primary infection of the lung with aspergillus fumigatus with prompt and apparently complete recovery. In reviewing the literature on pulmonary aspergillosis we find repeatedly that:

First, the disease is rare, and

Second, that the disease when once well established usually terminates fatally, but may subside at any stage of its course but leaving symptoms.

Third, that the diagnosis can be made only by finding the organism in the sputum or by culture or by animal innoculation.

Fourth, when it affects the lungs primarily the symptoms are those of chronic ulcerative tuberculosis.

Fifth, treatment consists of preventive measures and those suitable for tuberculosis—potassium iodide in large doses, long continued with a rest week every three or four weeks, irradiation, inhalations, iodine and sodium cacodylate have all been urged.

Dr. Mary E. Lapham of Highlands, N. C., in a paper before the American Medical Association which was reported in the September 25, 1926, number of the *Journal of the A. M. A.*, reviewed a number of cases, going into the different types such as the pulmonary type, et cetera. This paper is well worth reading. Dr. Lapham questions the extreme rarity of this infection and says:

"During the last three years I have had ten cases of positive cultures which were sent to me as cases of tuberculosis. If ten cases of aspergillosis are found in three years in an obscure little village on top of the Blue Ridge mountains, how many cases would be found if routine cultures were made from the sputum of every case of tuberculosis?"

Dr. Lapham calls attention to the fact that good recoveries can be made in primary cases of pulmonary aspergillosis, but considers that tuberculosis cases complicated with aspergillosis have not done so well.

In case 2, the aspergillus fungus was found in the lung only, but was probably just a complication, but may have contributed to the agranulocytosis.

Case 3 had, in addition to his asthma, a pulmonary infection of both actinomyces and spirochetes. He is a car repairer which means he inhales dust from cattle cars. He was formerly a farmer. A brief review of the literature on actinomycosis shows that this disease, though considered rare, is being more and more frequently recognized. This is the branching or ray fungus. The fungi are found on vegetation and in dust. Males are more often victims, comprising about 80% of all cases. All ages may be affected, but it is more common in the third and fourth decade. In the reported cases the oldest was 84 years and the youngest 28 days. Only 5.5% of all pulmonary cases were in children. The duration of the disease varies with the part of the body affected, ranging in time from six to ten months in the majority of locations to two to three years in the lungs. Pulmonary actinomycosis is usually fatal, but healing occasionally occurs. Four types are recognized, viz: Pneumonic, pleuritic, pleuropneumonic, and metastatic nodules.

The clinical symptoms vary widely. They may be chills, fever of irregular type, night sweats, anemia, severe pain, emaciation. Sputum may be full of pus, have feted odor, may be somewhat bloody or may be thin and watery. The x-ray picture is variable.

Distinguishing charactertistics of actinomycosis and tuberculosis:

ACTINOMYCOSIS

Lower lobes of lung first affected.
Lymph nodes never involved.
Pain a common symptom.
Cavity formation rare.
Fungi often in sputum.
Spreads by continuity.
Sinuses often present in chest wall.
Abscess formation frequent.
Often spreads through diaphragm.

TUBERCULOSIS

Apexes first affected.
Lymph nodes usually involved.
Pain a rare symptom.
Cavity formation frequent.
Tubercle bacilli often in sputum.
Often metastasized through blood.
No involvement of chest wall.
No abscess formation.
Very rarely spreads through diaphragm.

Treatment consists chiefly in potassium iodide internally in increasing dosage even up to toleration; irradiation, arsenic, and copper sulphate internally and various other measures used to combate tuberculosis. Because of the finding of the spirochetes in the nose, throat and lungs of case No. 3, I am inserting a brief paragraph on this condition:

Often confused with tuberculosis and blastomycosis of the lung is spirochetosis which was first described by Rona in 1905. This protozoan infection of the lung was observed in one hospital in 33 cases in five years although comparatively few cases are as yet reported in literature. Fusospirochetal disease of the lungs is, like the fungus type, probably often the main factor in certain types of unresolved pneumonia and bloody bronchitis and primary bronchiectasis. Attention was often called to the general clinical condition in these patients as differentiated from tuberculosis, (1) they do not appear to be so sick, (2) their symptoms are milder, (3) the temperature is lower, (4) expectoration is scanty and often blood tinged. The leucocyte count is seldom over 10,000 and usually about normal.

SUMMARY

From a summary of the literature it would appear and seem to be the concensus of opinion that, mycotic lesions of the lung occur much more frequently than is commonly recognized or than the literature would indicate. They should always be kept in mind in cases of chronic pulmonary disease in which the diagnosis of tuberculosis is not positive. It may occur with tuberculosis. These infections are not always easily recognized even when suspected and are often hard to distinguish from tuberculosis even at autopsy. In obscure chronic lung infections a note should be made of all organisms present and even of those ordinarily regarded as nonpathogenic, secondary invaders. Often much interesting information may be had from the fresh unstained sputum. The addition of 10% potassium hydroxide often reveals unexpected mycelial structures. The true nature of the infection may be revealed only through the microscope. Blastomycosis, moniliasis, actinomycosis and aspergillosis may show their charactertistic organisms in the sputum. In actinomycosis the demonstration of the characteristic yellow or sulphur granules or the branching filaments in a tangled mass surrounded by a fringe of clubbed ends make the diagnosis probable. Gram stain or the hematoxylin and eosin stain may be used but these organisms are best seen in the hydroxide washed specimen. Moniliasis is due to a yeast like organism. Monilia cause a type of bronchopneumonia. Aspergillosis with its gray sputum is considered quite rare.

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CASE OF DIVERTICULUM OF THE CECUM SIMULATING ACUTE RECURRENT APPENDICITIS

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I. History and Physical Examination—Rogers.

Case No. 2994 (Mr. E. E .E.) was admitted to the medical service of Bryan Memorial hospital on March 27, 1929. The patient was white, married, thirty-nine years of age and a rancher by occupation. His chief complaint was that of pain in the right lower abdomen. He stated that he felt well until the morning of the preceding day. At that time he rather suddenly developed an acute pain in the right lower abdomen. The pain proved to be persistent, well localized in the right lower quadrant, and was relieved somewhat by an ice bag. There was no nausea and no vomiting. On the day of admission there was some burning on urination.

The patient described a similar although less severe attack which occurred one year ago. At this time an x-ray examination was made of his gastro-intestinal tract and the appendix filled and emptied in a normal manner, was not enlarged, and was freely moveable. During the interval between the attacks he experienced some distress in the lower abdomen at times.

Past history and family history revealed nothing of importance.

Physical examination revealed a well developed middle aged man who was quite uncomfortable. He held the lower extremities flexed.

Temperature 99.2. Pulse 84. Blood pressure 120/80. Complete examination was made and found to be essentially negative except the abdomen. The abdomen was moderately distended, there was marked rigidity of the right rectus, and marked tenderness of the entire abdomen, worse in the right and lower quadrant.

The urine had a specific gravity of 1.030, and a trace of acetone. No albumin, sugar, casts, or blood cells. Hemoglobin 90%. Red blood cell count 5,100,000. White blood cell count 14,400. Schilling count: Myelocytes 0, young forms 4, staff forms 25, segmented forms 43, eosinophyle 0, basophile 1, lymphocytes 15, mononuclears 12.

The history, physical findings, and laboratory findings indicated that a recurrent infection, acute at the time, existed in the right lower abdomen. This lesion is almost always an acute appendicitis, but in this case we had the knowledge of x-ray finding of a normal appendix, and the absence of nausea or vomiting which as a rule occur in an acutely inflamed appendix. A definite diagnosis was withheld but exploratory operation was advised. The patient consented and was referred to Dr. D. C. Hilton for operation.

II. Surgical Procedure, Classification of This Case of Diverticulitis, and References.—Hilton.

This case referred from Dr. Rogers' service is important to report because diverticulum of the cecum is very rare, and it belongs to that type of intestinal lesions grouped under the term "diverticulosis", which, as a group, are not so rare and assume major importance medically or surgically both in differential diagnosis and in treatment whenever found.

The patient was operated on as a case of acute surgical abdomen with an inflammatory lesion of the right lower quadrant, presumably appendicitis, acute, suppurative, without perforation. The history and physical examination furnished all the classical data of acute recurrent appendicitis except for the entire absence of nausea or vomiting or epigastric distress, and a single x-ray impression on a previous occasion that the appendix was normal.

Through the usual muscle splitting incision the cecum and appendix were exposed. The appendix was found to be free, to possess an ample meso-appendix, and to be apparently normal. On the mesial aspect of the cecum between the appendico-cecal and illeo-cecal junctions was a walnut sized mass. The walnut sized mass was attached to its surroundings by fibro-plastic adhesions of recent origin. It lay buried a livid, turgid tissue showing a yellowish area at one place where pus was pointing.

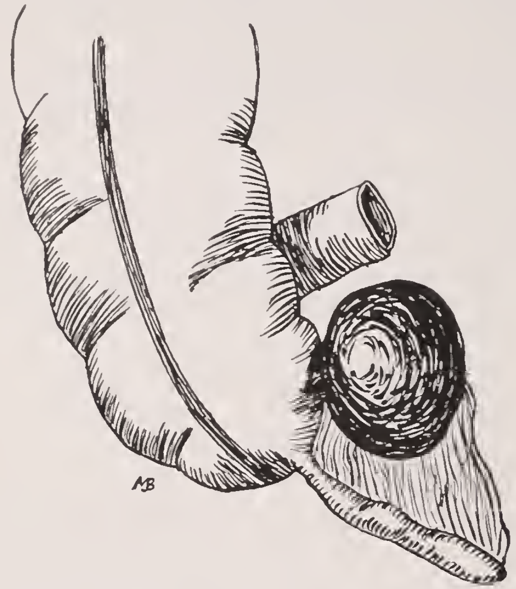

Fig. I. Diverticulum of the cecum. The appendix is attached. The cut surface shows where the diverticulum was attached to the cecum.

After mobilization this mass was discovered to be a diverticulum of the cecum entering the latter at a point less than 10 mm. from the appendico-cecal junction. The appendix and cecum were mobilized and the cecum was resected. The resected portion of cecum removed included the diverticulum and the appendix. One drain was provided and the wound closed. Healing by primary intention supervened and uninterrupted recovery took place.

Clinically this mass was a solitary, obstructed, abscessed and slightly pedunculated diverticulum of the cecum. Surgically it amounted to treating an abscess of the wall of the intestine, for the rapidly oncoming peridiverticulitis was yet minor, and pus had not escaped. Owing to the acute local peritonitis the intestines were not further explored.

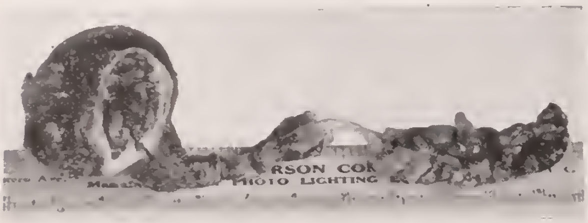

Fig. II. Showing specimen.

The incidence of this case relative to intestinal diverticulosis generally may be appreciated from the following outline:

Datum	Diverticulosis Generally	This Case	Remarks
Sex	Males to Females about 2 to 1	Male	
Age	Commonly 40 to 60 years	39 years	
Duration of Symptoms	Usually several months to few years	2 years	Usually give a history of 2 yrs. more or less. Some are symptomless.
Nausea and Vomiting	No, unless obstruction	No	
Diagnosis Confirmed by X-ray	Usually	No	
Classes of Lesions Simulated	1 Neoplasm 2 Granuloma 3 Pyogenic Infection 4 Obstruction of bowel 5 Perforation of bowel 6 Colitis 7 Sigmoiditis 8 Disease of contiguous viscera	Pyogenic infection (Appendicitis, acute suppurative).	The history of appendicitis, acute, recurrent, non-suppurative.
Part of Bowel Affected	Sigmoid Desc. colon Trans. colon Asc. colon) and cecum) and rectum)	Cecum	Sigmoid by far more common seat. Cecum probably not more than 1% of cases.*

*Note: In operated cases the percentage of cecal incident is higher. Masson (No. 13) reports six cecal cases from a series of one hundred and twelve cases of diverticulae operated at the Mayo clinic.

Note: The appendix is also occasionally the seat of diverticulitis.

The incidence of diverticula of the colon is illustrated by Newton$^{(24)}$, who reports 44 proven cases in 56,000 patients admitted to the Peter Bent Brigham Hospital, Boston, Massachusetts, over a period of 14 years.

The clinical grouping of diverticulosis by Newton$^{(24)}$ is very practical and as follows:

Group 1: Cases showing no clinical symptoms (ten).

Group 2: Cases showing symptoms but no abscess, fistula or peritonitis (eighteen).

Group 3: Cases showing peridiverticulitis (abscess, fistula and peritonitis included) (thirteen).

Group 4: Cases showing peridiverticulitis plus obstruction (two).

Group 5: Cases showing coincident carcinoma (one).

This case falls into Group 2, because the abscess was still confined within the intestinal wall, and the peridiverticulitis, though fulminating, was early. It was, however, passing rapidly into a severe case of Group 3.

The results of surgical treatment of diverticulitis on the large intestine published by DeQuervain$^{(15)}$, 1925, are as follows:

Acute cases (abscess, peritonitis, etc.):

	Cases.
Cured	38
Died	34
Result unknown	13
	85

Chronic cases (constrictions, hemorrhages, colitis):

	Cases	Cured	Died	Result unknown
Resections	104	54	7	43
Colostomies	8	7	1	----
Entero-anastomoses	6	2	2	2
Total	118	63	10	45

Generally speaking the prognosis of the acute complications of diverticulitis depends essentially on the stage at which the surgeon is applied to for treatment. In chronic cases when surgical intervention is early, resection, with or without temporary colostomy, is ideal if practicable. If resection is not practicable or if the case is undertaken with complications such as abscess, fistula, obstruction, etc., conservative surgery by drainage plus colostomy, to be followed in due time by resection or short circuiting of the diseased bowel, is advised.

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SHOULD THE GENERAL PRACTITIONER DO INTERMEDIATE CERVICAL REPAIR?*

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By intermediate repair of the cervix is meant the surgical treatment, in the latter days of the puerperium, of injuries received by the cervix during parturition. This surgical treatment consists in the suturing of greater or lesser lacerations of the cervix which invariably are the accompaniment of labor.

I present this subject to you at this time because of the present day tendency to practice preventive medicine, a practice which, I hope, will occupy more and more of our attention.

How often have you seen chronic infections of the cervix and endometrium associated with moderate or severe lacerations of the cervix? And how often have you seen cancer of the cervix and wondered what relationship it held to a pre-existing laceration with chronic infection? Do you not feel that if cervical lacerations could be avoided, or if not avoided, repaired at the most oportune moment, we would have fewer of the ills among women following childbirth?

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*Presented before the Five County (Madison, Stanton, Pierce, Antelope and Knox Counties) Medical Society, June 20, 1929.

Gynecologists are often called to correct conditions existing since the birth of the baby, such as an irritating leucorrhea; persisting backache; heaviness from congested pelvis; subinvoluted uterus; history of repeated spontaneous abortions following the first pregnancy; possible sterility; and symptoms of malignancy. All these conditions are laid to cervical tears. Indeed, many carcinomas of the cervix are referable to lacerations.

I shall first give you a brief historical resume and introduce you to several surgical procedures practiced on the cervix:

Marion Sims(1), in 1861, did the first plastic amputation of the cervix uteri, utilizing a cuff of vaginal mucosa as a stump covering. Then, in 1862, T. A. Emmet(2) performed his first successful trachelorrhaphy. Leonard(3) in 1913 and 1914, comparing the methods used by these pioneers, conclude that the presence of marked endocervicitis should be considered as a contraindication to simple trachelorrhaphy because it is not a curative measure for this condition as is amputation. Fertility, however, is more likely after trachelorrhaphy than after amputation. After amputation, the incidence of abortion and premature delivery greatly increases, while after trachelorrhaphy there is no effect. Labor after amputation is usually difficult, after trachelorrhaphy usually normal. Hence, it follows, that amputation should be avoided before the menopause and trachelorrhaphy chosen in properly selected cases.

Williams(4) contends that the cervix uteri is consistently neglected surgically after injuries from labor. This neglect is probably due to textbooks which advise cervical repair only in cases of hemorrhage. The medical schools also are to blame. They do not advise repair in their teaching until after extensive pathology has occurred. Many practitioners never know, as a result, the damage done because they fail to make postpartum examinations.

Furthermore, cervical tears are often not admitted to the patient by the obstetrician because of the fear of criticism of improper care. The time will come when all practitioners will be held responsible for neglecting the repair of the cervix.

In a study of two hundred recent deliveries Williams finds that 86 per cent had lacerations; 85 per cent of these were bilateral. The record shows that 80 per cent of all primiparae have cervical injuries.

There are three degrees of lacerations:

First degree: Injury of the mucous membrane which does not affect the body of the cervix.

Second degree: Injury to the body of the cervix which extends upwards to the angle of the fornix. The extent of this injury may be slight, moderate, or extensive.

Third degree: Laceration which extends into the broad ligament.

Of the 86 per cent. of cases with lacerations 15 per cent. were first degree, while 71 per cent. were second degree, mostly moderate in extent.

Considering primiparae only he concludes the following to be causative factors:

1. The age of the parturient: In fifty women, ages 19-39 years, no relation as to age existed in spite of the notion that older women are more prone to injury when giving birth to the first baby.

2. Occipital presentations: In occiput anterior positions, the lacerations seem fairly equally divided between the side on which the occiput presents and the opposite side, with possibly slightly more extensive lesions on the presenting side.

In occiput posterior positions all had moderate second degree tears, with no difference as to sides.

3. Membranes: In cases where the membranes remained intact till dilatation was complete or almost complete, 88 per cent. showed second degree tears, one half of these being moderate in extent. There were no tears in 12 per cent of the cases.

In cases where the membranes "broke" before the onset of labor or before dilatation had progressed, 42 per cent showed a first degree tear with no tears in 28 per cent. Second degree tears occurred in 30 per cent. Hence there is less injury in dry labors.

4. Length of labor: Labors under ten hours had no tears in 20 per cent of the cases; first degree tears in 20 per cent and second degree in 60 per cent. In labors over twelve hours there were none without tears; 30 per cent were first degree and 70 per cent second degree tears. It follows that there is more extensive injury in longer labors.

5. Drugs: Opiates, especially twilight analgesia, reduce injury by a considerable degree.

The use of pituitrin may increase the amount of injury.

6. Instrumentation: This increases injury. In most cases manual dilatation means manual tearing. Forceps deliveries lead to tears. In all forceps cases there were none with less than a moderate second degree tear. Dilating bags increase the amount of injury, especially if traction is used. Version and extraction result in extensive tears. In all these cases there were lacerations, none less than a moderate second degree.

7. Size of the baby: This also has a definite influence. If the suboccipitobregmatic diameter is 30 cm. or less, tears of not more than first degree are produced. If the suboccipitobregmatic diameter is greater than 30 cm., invariably tears of second degree, moderate or extensive in extent, are produced.

If tears are let alone, they heal with considerable scar tissue formation, erosion of mucous membrane with cystic degeneration of cervical tissue, generalized hypertrophy and gaping os which induces chronic infection of the cervical glands and endometrium.

To avoid these sequelae the question arises when to repair the cervix.

Present day obstetricians are concerned, in various parts of the country, with the question of whether it is most advisable to suture lacerations of the cervix immediately after delivery or whether to wait for a period of a week or ten days before repair is made.

The advocates of immediate repair(5), (6), (7), (8), believe with Pettit(5) that the following objections to immediate repair are not valid;

1. Added danger of puerperal sepsis;
2. Oedema—preventing proper coaption of parts;
3. Prevention of free drainage of lochia;
4. Difficulty of technique of repairing.

The proponents of intermediate repair, Williams(4), Coffey(9), Hirst(10), and others(11), (12), (13), claim these as valid objections. Coffey(9) further states that the condition of the cervix immediately after birth is as follows:

It is a jelly-like mass, with the consistency of liver, soft, flabby, dark-blue in color, very edematous and overstretched.

Because of this he is opposed to immediate repair, except in cases of alarming hemorrhage. The parts are so distorted, bruised, and soft that the sutures do not hold, and there is great difficulty in approximating the edges. By the ninth or tenth day the tissues have regained their tone, and they are easily approximated and repaired.

Hirst(10) says that immediate repair of the cervix cannot be done adequately,—there are too many complaints from patients afterwards. For this reason he does intermediate repair at leisure. He advises reform in this direction in teaching. The text-books are at fault; they teach immediate repair of the injuries of childbirth. He does all cervical repairs a week after the baby's birth. Since he instituted this method into his practice all complaints have disappeared.

Emge states that immediate repair should be done(6). He further states that the relation of cervical infection to bladder disturbances, and especially of trigonitis of obscure origin, is little appreciated and deserves special mention.

His end results in seventy-three cases of immediate cervical repair, however, I believe do not warrant that repair should be done immediately, for his table shows that in primparae there were 17 per cent of failures or only fair result, while in multiparae there were 65 per cent of failures or only fair result.

His results seem fairly satisfactory in primiparae, but less so in multiparae with hypertrophy and disturbed cervical blood supply. The distortion and lack of tone of cervical tissue following delivery, interference from uterine blood, difficulty of determining the extent of actual injury, and the uncertainty of accurate coaption of the torn edges and the tendency for sutures not holding in the edematous, jelly-like tissue are factors which tend to make immediate repair less perfect.

From the eighth to the tenth day post-partum the cervix has regained much tone, the extent of laceration can be definitely ascertained, the field of operation is less hemorrhagic, and approximation of clean freshened edges can be accurately obtained.

Hirst recommends suture on the fifth or sixth day. Titian Coffey for seventeen years habitually repairs the cervix on the ninth day post-partum (except in presence of infection). Williams also has made it a habit to do intermediate repair.

Coffey(9) describes the condition of the cervix on the ninth day as follows:

The size is little larger than normal and evidences of injury are easily demonstrated. The color is healthy, but occasionally small areas of slough, and in many cervices hemorrhagic spots are evidenced by areas of blue discoloration. The torn lips are covered with thick glairy tenacious mucus, which is blood-stained. The lacerated surfaces are covered with fresh granulations that bleed freely. Sometimes the everted lips give a cauliflower appearance, are covered with soft, bright-red, spongy granulations, which are sometimes one-eighth to one fourth inch in heighth. The granulated cervix is thickly studded with hypertrophied cervical glands, and the tissues look like they have been powdered with sago.

The technique used by Williams on the ninth day post-partum, modified slightly after Coffey, is as follows:

An enema is given two hours before the operation, which can be performed in the home on an ordinary table. The bladder is emptied. Shaving preparation is usually unnecessary since this was done before delivery. An H. M. C. (hyoscine-morphine-cactine) No. 1 tablet is given hypodermically one-half hour before the operation. The patient assumes the lithotomy position with the buttocks well over the edge of the table. The operative field is cleansed with green soap and water. A lysol douche is given, and the patient is then draped.

A trivalve vaginal speculum is used. A curved single-toothed tenaculum is used in the upper lip; a straight one in the lower. These together serve for slight traction on the cervix and for land-marks. The trivalve speculum is then removed and replaced carefully by a light weight speculum. Care should be observed not to cause much traction, which is painful, nor should one pull the cervix out of the vagina. The cervix is injected with 2 per cent novocaine in the anterior portion and especially behind the angles of the lacerations. The edges are freshened with scissors; the granulations removed, so also cysts and other irregularities. Finally the edges are curetted to get them raw.

Then proceed to suture with No. 2 40-day chromic cat gut, starting well at the upper angle to get coaption, being careful not to leave a sinus at the upper angle. Interlocking suture is used, three bites of the needle on either side are usually sufficient. Occasionally interruptured sutures are used, but this depends on the nature of the tears. The sutures run right down to the tenacula. This gives a neatly closed cervix with a new os. A sound is then passed before removing the tenacula to prove patency. The cervix is pushed far back, the perineal sutures, if any, are removed, a lysol douche given, and the operation is complete.

The method of anesthesia, of course, may be varied as we are today enabled to get such good results in perineal work with the use of caudal anesthesia, or still better when caudal anesthesia is combined with the injection of both the first and second sacral foramina on each side. Either method eliminates the necessity of the H. M. C. tablet and local infiltration of novocaine. About 30-40 c. c. of a 1 or 2 per cent solution of novocaine is used for caudal injection, and 5-10 c. c. for each of the foramina.

A number of practitioners use nitrous oxide or ethylene successfully in hospital cases.

I have seen the operation performed with success with the use of caudal anesthesia alone and Williams' operative procedure.

Titian Coffey(9) gives the following advantages resulting from the operation:

1. It hastens and insures normal involution—prevents subsequent metritis and endometritis.
2. There is no loss of tissue as occurs when a greatly hypertrophied cervix filled with scar tissue is repaired.
3. It eliminates a future operation and lessens the danger of malignancy.
4. There is perfect healing,—and a good cervix for later pregnancy.
5. A general anesthetic is not needed (although sometimes used), hence risk is avoided.
6. It does not interfere with the patient's post-partum progress and the patient can be dismissed at the usual time, i. e., about the fourteenth day.

The result at the end of six weeks: The cervix is normal, there is no discharge, perfect union by primary intention, and a pinhole os which looks like a nulliparous os.

According to Williams(4) very infrequently the lochia is retained for 36-48 hours following the operation as indicated by a slight rise of temperature and absence of discharge. If this is not corrected by upright position in bed, two or three doses of egot will suffice to restore the normal flow.

He finds, at the final examination at his office six weeks after dismissal, the cervix well healed, the scar scarcely visible, the os small and round, absence of eversion or erosion of mucous membrane, the discharge, if any, a slight mucoid secretion which is soon gone. The fundus is markedly involuted and it is difficult to tell if the woman has had any disturbance incident to parturition.

Subjectively these patients show none of the symptoms of morbidity common to the parturient, such as failure to regain strength, nervousness, mental depression, backaches and feeling of heaviness and sagging in the pelvis.

The effect on subsquent labors (Williams): Thirteen of his series had previously been repaired. The average length of labor in these thirteen was eight and one half hours; one had a first degree tear of slight extent and twelve had second degree tears of moderate extent. The cervix can be repaired repeatedly.

Summarizing the benefits of intermediate repair:

1. The cervix is restored to the former state.

2. There is no danger to the patient and the period of convalescence is the same.

3. The morbidity is reduced.

4. Chronic infections of the cervix and the endometrium are minimized.

5. Intermediate repair is a prophylaxis against malignancy.

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SOME EARLY DAY MADISON COUNTY PHYSICIANS*

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To prepare an historical survey of Madison county physicians of pioneer days requires research and some contemporary knowledge. The sketch here given may lack some data, but is as nearly accurate as it was possible to make it with the material at hand and with the cooperation of friends whose interest was enlisted.

It appears that the first medical practice act passed in Nebraska was put on the statute books in 1881. It provided that graduates of reputable medical schools shall register with the county clerk of the county in which they desired to practice and also provided that non-graduates who had been engaged in the practice of medicine in Nebraska for two years prior to the taking effect of the statute were allowed to continue to practice medicine on registration. All physicians of the county were supposed to have registered under this act up to 1891 and the data from these is of record now. In 1891 an act creating the State Board of Health was passed and this act provided for the registration of all physicians with the state board which granted licenses and the licenses so granted were registered with the county clerk. Licenses, however, do not contain the name of the college of graduation and this proved a handicap in our search for facts.

This article will deal only with physicians who came to the county up to the year 1900.

NORFOLK

The first actual settlement at Norfolk was made in 1866 by the German colonists from Wisconsin. There is no available record of any physician among the colonists until 1869 when DR. FERDINAND VERGES located a claim north of Norfolk in Pierce county, from which place he served the settlement as physician until 1881 when he removed to Norfolk, where he continued to practice until shortly before his death. He died March 31, 1900, aged 66 years. He was a graduate of the first homeopathic medical school in Germany, the Homeopathic Academy and Hospital at Cothen (or Koethen) in 1857. He was a small wizen-faced man, but a strong character, and he left his impress on the pioneer community which he served. Dr. C. J. Verges, Norfolk, is a son.

DR. ALEXANDER BEAR located in Norfolk in 1872. He was a graduate of the University of Maryland, 1860, served as a medical officer in the Civil war on the Confederate side. He came to Fremont in the fall of 1867. Early in 1871 he moved to West Point, but remained there only about one year when he moved to Norfolk. He has always been spoken of as the "pioneer physician of the Elkhorn valley." While at West Point, Jim McMahon, of Madison county, one of three hunters who got caught in a blizzard, and two of whom, the Moon brothers, perished, was taken to Dr. Bear at West Point to have his feet amputated. A number of settlers in Wayne county who had been caught in the blizzard while on a trip to the Indian reservation for wood, were badly frozen. After the lines of demarkation formed Dr. Bear was called to amputate and went from house to house to do so, the work taking several days.

During the early days in Norfolk his practice extended all over north Nebraska. He was the pioneer surgeon of north Nebraska and was much in demand as consultant with other physicians who came into the territory with the development of the country. Dr. Bear always took an active interest in politics on the Democratic side. He was elected to the state senate in 1874 representing about all of north Nebraska; was a member of the board of regents of the state university in 1875; was the first member of the lower house of the legislature from Madison county, in 1876; was mayor of Norfolk a number of terms, at different periods, and was a candidate for other offices. He was an early-day vice president of the Nebraska State Medical society. He was the first president of the Elkhorn Valley Medical society. He practiced in Norfolk until 1909 when he retired and moved to Richmond, Va., (from which place he came to Nebraska originally), and died there April 12, 1924, aged about eighty-four years.

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*President's address given before the Madison County Historical Society, Madison, Jan. 24, 1930.

Dr. Bear married late in life, when past 50, and it was always rumored that he married the daughter of the woman he courted when he was a young man in Virginia. The wife, a delightful person, bore him a son and daughter.

DR. PETER SCHWENCK came to Norfolk in 1877 and practiced there until 1881. He was a politician of note and became register of the land office in 1881 and retired from practice. He registered as from the University of Bonn, Germany, 1861. He also stated in his registration that he had been assistant surgeon at the Hickory Street hospital, New Orleans, from 1863 to 1865. He had practiced at West Point from 1871 to 1877. He also stated he had practiced three years in Indiana. Current belief in the eighties was that he was not an educated doctor and that he had been a hospital attendant during the war.

DR. A. L. MACOMBER graduated from the New York Homeopathic Medical college in 1872. He registered, as located at Norfolk, as soon as the county registration law went into effect, in July, 1881; but it is likely that he had been at Norfolk some months or perhaps a year before the taking effect of the law. He continued in practice in Norfolk for at least forty years—perhaps longer, until failing health compelled retirement. He died in Rochester, N. Y., Jan. 20, 1922, aged 77 years. He had quite a large practice for many years. He was noted as a deeply religious man.

DR. D. R. DANIEL graduated from Washington University Medical school, Baltimore, in 1876. He registered in Madison county in 1881 and the statement made by him reads that he had "practiced one year at Battle Creek and seven years at Norfolk" at that time. He was postmaster of Norfolk during the Cleveland administration. He was a great sufferer from asthma and was compelled to limit his practice to office work and in connection conducted a drug store. He died in 1898.

DR. G. B. RICHARDS came to Norfolk in 1882 and for a time was associated with Dr. Bear. He was a graduate of the College of Physicians and Surgeons, Keokuk, 1864. He practiced in Iowa twenty-two years and was 53 years of age when he came to Norfolk. He was a man of dignity and poise and commanded the respect of his fellows. He was the first treasurer of the Elkhorn Valley Medical society. He died at Norfolk in January, 1898. Mrs. Winnie Durland and Mrs. Ida Nicola, Norfolk, are daughters.

DR. A. B. TASHJEAN landed in Norfolk in 1884. He was a graduate of Bennett Medical College, 1884, and in 1895 he was given a degree by Rush Medical College. He was an Armenian by birth and rearing. His Near-East characteristics followed him through a long life. He acquired a very large practice which he held until his later years. He never married. He was perhaps the best read physician in the Elkhorn valley, but he could not always apply his knowledge. He died in Norfolk in May, 1928, aged about 72 years.

DR. JOHN W. KOEHN came to Norfolk from Davenport, Ia., in 1885, a recent graduate of the Iowa State University Medical school and had been an assistant to Dr. W. F. Peck, professor of surgery at the medical school. The writer met him soon after his arrival and he was told by Dr. Koehn that he was "just thirsting for gore." Not long after a young woman, waiter at his boarding house, went to consult him about her troubles. He diagnosed a tumor. He did an operation to remove the tumor and found a pregnancy. She died a few days later—and Dr. Koehn disappeared during the night. His name appears in a current medical directory of Chicago.

DR. W. H. ROBERTS came to Norfolk in 1885, having practiced nineteen years in Iowa. He was a graduate of the American University of Philadelphia, 1865, and the College of Physicians and Surgeons, Keokuk 1878. He was a veteran of the Civil war. He was a man of good training in medicine but had some bad habits that detracted from his usefulness. He returned to Iowa after a year or two.

DR. F. A. BRYANT came to Norfolk in 1886. He was a graduate of the College of Physicians and Surgeons, Keokuk, 1876, and had practiced at Griswold, Ia., before removing to Norfolk. He left Norfolk in 1906 and took a homestead in Stanley county, South Dakota. Later he located at Herrick where he is at present. Doctor Bryant is a man of some literary talent. While at Norfolk he published a novel "A Romance of Two Lives". He also published "The Slave of Dreamwater", "Echoes of a Log Schoolhouse" and a volume of poems, "Leaves of the Mystic Trail". Doctor Bryant is a modest man, who never pushed himself.

DR. W. H. H. HAGEY came to Norfolk from Iowa in 1888. He was a veteran of the Civil war. He was a graduate of Rush Medical College, 1868. He had practiced twenty years in Illinois and Iowa before coming to Norfolk. He was a well read and agreeable man and had a considerable clientele for many years. At one time he conducted a so-called Keely institute for the cure of the liquor habit in Norfolk. He died in October, 1911.

DR. W. F. CONWELL located at Norfolk in 1889, coming from Oakdale where he had been for nine years. He was a graduate of Bellevue Hospital Medical college, 1868, and had graduated previous to that from some other school. After about a year at Norfolk, he located at Neligh where he acquired a large practice and held it for many years. He died Nov. 9, 1921, aged 75 years.

DR. P. H. SALTER located at Norfolk when he was 26 years old, in 1889. He was graduated from the Medical College of Trinity University, Toronto, 1884, and the Royal College of Physicians and Surgeons, Edinburg, 1885. He was ship surgeon on the Clan Line plying between Liverpool and India ports about a year. Returning to this country he went to Kansas City intending to locate, but after a short time returned to Port Hope, Canada, his native place, and practiced there three years after which he located at Norfolk. There he soon made a place for himself as a successful practitioner. He developed a surgical practice with the development of the country. He has been division surgeon for the Northwestern railroad since 1890.

The need for hospital facilities soon induced him to develop such facilities, first at the home of a practical nurse; thereafter he took over and converted into hospitals, one after another, several private homes which he conducted until 1914 when he built the Norfolk General Hospital on West Norfolk avenue which he conducted until 1929, when he closed it and became a member of the staff of the Lutheran hospital. Dr. Salter, with the assistance of Dr. Long, organized the Elkhorn Valley Medical Society, Dec. 26, 1926, and was one of its early presidents.

Dr. Salter is one of seven Nebraska surgeons who are charter members of the American College of Surgeons.

He was a member of the board of councilors of the Nebraska State Medical Association for a number of years. He was president of the Nebraska State Medical Association 1909-1910.

DR. TUPPER KIRBY located at Norfolk in 1891. He was a graduate at Drake University, 1881. He had practiced ten years in Iowa before coming to Norfolk. He had an insinuating manner and soon acquired a considerable practice. Family troubles, it is supposed, made life in Norfolk unpleasant, so he left about 1898 or 1899 and located at Kearney. He is now at Council Bluffs.

DR. G. O. REMY located at Norfolk in July, 1894. He had pioneered in the Ainsworth community where he located in 1884, and remained until 1892 when that country was about starved out by a series of drouths, when he located at Pender, and later at Norfolk. He remained in Norfolk until 1896 when he returned to Ainsworth where he has practiced to the present time. He is a graduate of the Medical College of Ohio, 1877.

DR. FRANK SALTER located at Norfolk in 1897, coming from Dannebrog. He was associated with his brother, Dr. P. H. Salter, while in Norfolk. He moved to the Rosebud in 1904, and remained there until 1908 when he located in Pierce where he is now in practire. He is a graduate of the Medical College of Trinity University, Toronto, 1889.

DR. H. F. HOLDEN came to Norfolk in March, 1898. He was a graduate of a homeopathic medical school. He was a man of considerable force of character. After being in Norfolk about ten years, he moved to Omaha and accepted the medical directorship of the German-American Life Insurance company, and died there about five years later.

Several other physicians were located in Norfolk for varying short periods, notably DR. F. W. KIESAU, and a DR. WALTERS, about whom I was unable to get any data at all. I have omitted the physicians who at different periods were connected with the Norfolk State Hospital as they did not really belong to Norfolk or Madison county, but were state employes temporarily located there. A further reason is that I was unable to get any data about them at all and personal recollections did not justify any attempt to give them a place in this sketch.

BATTLE CREEK

The first physician at Battle Creek seems to have been a DOCTOR STEWART who came from Iowa, 1878, remained until the fall of 1880 and then returned to Iowa. Nothing else could be found out about him.

JOSEPH R. MORRIS seems to have been a minister of some church at Battle Creek and also practiced medicine. He registered as a graduate of the Eclectic Medical Institute of Cincinnati, 1859. He registered in 1881 and stated he had been in Battle Creek three years at that time. Whether he was a graduate as stated or not, he seems to have had very little medical knowledge. He left about 1881.

DR. EDWARD TANNER, who has been in practice in Madison county over fifty years, located at Battle Creek in 1881, and has remained in practice since that time. Within recent years he has had to limit his work according to his physical powers. He is a native of New York state, graduated from The University of the City of New York in 1879, practiced one and one-half years at Denmark, N. Y., near his birthplace, came to Norfolk, in January, 1881, and located at Battle Creek in June as above stated. He served as coroner of Madison county, as a member of the board of education in his home town, etc. He is perhaps the best liked physician in Madison county.

The physicians of Madison county gave him a testimonial dinner, last October, in commemoration of his fifty years of practice.

DR. M. E. DOOLITTLE, graduate of the Homeopathic Medical University, St. Louis, 1881, after practicing in Wisconsin four years came to Battle Creek in 1885 and went to Harwarden, Ia., in 1886.

DR. J. E. WARRICK, graduate of the College of Physicians, Baltimore, 1888, came to Battle Creek in 1889 and left about 1891, and is now at Valentine.

DR. I. J. DANIEL, graduate of College of Physicians and Surgeons, Baltimore, 1885, practiced in Virginia seven years and came first to Meadow Grove, then for several years lived at Hale postoffice before locating at Battle Creek, about 1893 or 1894. About 1899 he located in Oklahoma where he died about 1910 of cancer of the breast. He was a timid, conscientious man, liked by most people, but lacked aggressiveness.

DR. JOHN E. O'KEEFE, graduated from the Iowa University College of Medicine in 1896 and soon after located at Battle Creek and remained possibly a year. He was a charter member of the Elkhorn Valley Medical Society. He has been located at Waterloo, Ia., for many years and is now one of the foremost surgeons of northern Iowa.

MEADOW GROVE

DR. A. E. SCOFIELD was the first physician at Meadow Grove, he having located there in the spring of 1889 soon after graduation. He moved to Tilden in the spring of 1891 and is mentioned further under Tilden.

DR. H. L. KINDRED located at Meadow Grove in June, 1893. He graduated from the Kansas City Medical College in 1892. He early made a place for himself in the community and has always retained the confidence of the people. He does some eye, ear, nose and throat work in addition to the general run of practice.

DR. CHARLES KREICHBAUM was at Meadow Grove from 1894 to 1896. He was not a graduate. Where he went from Meadow Grove we do not know. He has been dead for many years.

TILDEN

It seems clear that DR. W. C. GRIFFITH was the first physician at Tilden, then called Burnett. It is not so clear when he located or how long he was there. In registering in 1881 he stated that he had been in practice in Madison county four years. Pat. Stanton, a pioneer of that community, thinks he went there about 1881.

DR. A. E. EDDY located at Tilden in 1884 and left there in 1891 going to Randolph, from which place he moved in 1893 to Parsons, Kan. He did not practice medicine after leaving Randolph. Nothing is known of his medical training. A step-daughter lives at Tilden—Mrs. David Bliss.

DR. E. P. MACOMBER, a graduate of the New York Homeopathic Medical College, 1877, came to Burnett (now Tilden) in 1883. He had practiced in New Jersey, Mass., and Iowa before coming to Nebraska. He was somewhat of a mystic and few people understood him. He had considerable business while he was there. He was found dead in his office, a suicide, in March, 1891. He was unmarried.

DR. A. E. SCOFIELD, a graduate of the Iowa State University Medical School, 1889, located at Tilden in the spring of 1891, immediately following Macomber's death. He had been located at Meadow Grove since 1889. He was a well informed and well balanced physician. He did pioneer surgery. A case that shows his courage and skill follows: The home of a settler named Rotter, south of Tilden, burned and the family temporarily lived in the chicken coop. The parents one day went to town leaving the children at home, unattended. Meddling with a .22 rifle the little boy of about 8 was shot through the abdomen. Dr. Scofield was called to attend him. He took several persons with him to the home. An immediate operation was indicated if the child was to be saved. It was early summer. Boiling water was obtained, a table prepared under a cherry tree in the yard and with the assistance of W. H. Field, now of Madison, and Charlie Smith, the child was anaesthetized, the abdomen opened. eight perforations found and sewed up and the child recovered without an untoward symptom, and is now living in that neighborhood—John Rotter.

Dr. Scofield was thought to have a brilliant future when in April, 1900, he died following an operation for double mastoiditis, leaving a widow and two children.

Three physicians almost simultaneously located at Tilden following the death of Dr. Scofield: DR. W. J. DOUGLAS, who, after a few months, went to Atkinson, where he now is in the enjoyment of a large practice; a DOCTOR NELSON, who, after about a year, married the widow of Dr. Scofield and later moved to Excelsior Springs, Mo., where we lose track of him, and DR. S. A. CAMPBELL. Dr. Campbell was graduated from the Omaha Medical College in 1898, and immediately after that was house physician of the Emergency Hospital of the Transmississippi Exposition at Omaha in 1898. He then spent some time in postgraduate work in surgery in New York City so that when he located at Tilden in the spring of 1900 he was prepared to engage in a surgical practice. He established a small hospital and developed a large surgical clientele. In 1918 he moved to Norfolk and with his partner, the late Dr. M. D. Baker, established the nucleus of what is now the Lutheran hospital in the building now used for a nurses home. Later he built the first unit of the present Lutheran hospital building. In 1928 The Campbell clinic building was completed.

NEWMAN GROVE

DR. SAMUEL SANDERSON was the pioneer physician at Newman Grove. There is difference of opinion about the time he located, but probably as early as 1875. He seems to have left in 1882 and no one seems to know anything about his subsequent career.

DR. J. P. CARGEN must have located in 1879 or 1880, for he stated in registering in 1881 that he had been at Newman Grove about two years. He was 31 when he registered, and is now living in retirement at Cambridge, Wis., aged about 80 years. He was a graduate of the College of Physicians and Surgeons of Keokuk, 1879. He must have been at Newman Grove until about 1887, when he was succeeded by a brother, DR WILLIAM CARGEN, a graduate of the Rush Medical College in 1884. He had been in practice at Cambridge, Wis., several years and apparently the two brothers exchanged locations, the elder Cargen going to Cambridge when the younger came to Newman Grove. He was in practice at Newman Grove about 11 years and on account of ill health returned to Cambridge, Wis., in 1897, where he died in 1900.

DR. W. S. GILLETTE registered in 1883, (but probably came to Newman Grove in 1882), as having attended the Hahnemann Medical College, Chicago, the winters of 1877 and 1878. He did not claim to have graduated, but his daughter informs me that he was graduated in 1878. When he came to Newman Grove he was 38 years old. He was an aggressive practitioner of indifferent ability. He left about 1892 and died at Stowe, Vt., in 1902. James Gillette, Norfolk, is a son.

DR. F. L. FRINK went to Newman Grove in the spring of 1891 and has continued in practice there since that time. He is a graduate of the Louisville Medical College, 1891, and as honor man in surgery, was awarded a gold medal. He faithfully devoted his life to the community, did much general surgery in earlier days at the homes of patients and held the respect of the people for these many years. At the outbreak of the World war he enlisted, was given rank of captain and served at training camps for almost a year. He has been mayor of Newman Grove for ten years and is vice commander of the Nebraska American Legion at this time.

DR. D. B. McMAHON went to Newman Grove from Dodge in 1898. He left in 1916 going to Fort Morgan, Colo. Later he came to Humphrey and become associated with Pat. McKillup in the real estate business. After a time he became insane and died in the Norfolk State hospital in 1918. He was a good average physician, and a likeable person. He devoted some study and effort to diseases of the eye, ear, nose and throat. He was a graduate of the Omaha Medical College.

MADISON

The permanent settlers came to Madison county for the most part in the early seventies. Among them were three men who were known as "doctors" although none of them was a graduate and all three lived on claims. One was known as "DOC" WEBSTER, his initials being A. A. He lived on a homestead in Fairview. He registered in 1882 as 48 years old and as having practiced in Indiana sixteen years and Madison county two years. He had no medical education. He also posed as versed in the law. It appears that he dispensed some homeopathic remedies, but he never pretended to do a regular practice. He moved to Keyapaha county and died near Mills at an advanced age.

"DR." JOHN QUINCY ADAMS HARVEY lived on a claim on Taylor creek, three miles from Madison, on a farm now known as the Alex Graves place. He seems to have accommodated his neighbors when they needed medical care, by use of "roots and yarbs" and by giving calomel and quinine. He was an eccentric character, lived by himself and was the first coroner of Madison county. An early-day story was that when called to the cabin of a settler found dead down Union creek he opened the door, looked in, and in his high pitched voice pronounced the verdict—"Deader'n hell!" He left Madison county in the late eighties.

DR. JOHN L. WILBERGER, who had been a practitioner in eastern Iowa but not a graduate, settled on Union creek about three miles south of the Green Garden Lutheran church in the early seventies. He was a rather shrewd man and appears to have done considerable practice before the advent of the regular physician. In the early eighties he was located in Omaha for several years, catering to the business of the slums, but later returned to Madison, where he died, in the late eighties.

A DOCTOR MERRIAM was the first regular physician at Madison. Just when he located, how long he remained and when he left and what his full name was, is not known. He moved to Wisner, where he died about 1890.

DR. S. J. BRIDENSTINE, a graduate of the medical department of the Iowa State University, located at Madison in 1875 and remained there until 1889 when he moved to the Puget Sound country, first to Port Orchard and later to Ballard, a suburb of Seattle, where he died Nov. 25, 1928. He had a very large practice at Madison and was the best liked of all Madison's physicians. He early took up the study of electricity in medicine and had some very fine apparatus.

A DOCTOR FLEISCHMAN came to Madison in the latter part of 1880 and remained until early in 1882 when he left somewhat surreptitiously, leaving his equipment and a board bill at the hotel. Reports seemed to indicate that he was either discouraged or lazy. He never acquired any considerable business.

DR. F. A. LONG (the writer), located at Madison, June 27, 1882, with a diploma under his arm from the Iowa University College of Medicine, but with very little knowledge of the world and its ways and without money. He secured very little business the first few years, but no less than he deserved. It took about five years to get on a living basis, after which the fates were kinder to him. He has now been in practice at Madison almost forty-eight years and his later career is known to many people. With Dr. F. L. Frink, he did an appendectomy in December, 1892, perhaps the first one in all north Nebraska. He was always interested in surgery and did various operations of considerable magnitude in pioneer days. He early became interested in medical society work and with Dr. P. H. Salter, organized the Elkhorn Valley Medical society, Dec. 26, 1896, at Norfolk and became its first secretary and third president. He became president of the Nebraska State Medical Association in 1906 and was delegate to the American Medical Association at Atlantic City in 1907, Chicago, 1908, and Los Angeles, 1911; delegate representing the Nebraska State Medical Association at the Second Conservation Congress at St. Paul; Nebraska member of the Council on Medical Education and Medical Legislation in Chicago two successive years and has been editor of The Nebraska State Medical Journal since 1920 and has been chairman of the publication board since the inception of the Journal in 1916. He has been vice president of the International Meridian Highway Association since 1923, and has for many years been actively interested in the Good Roads movement.

DR. A. B. COX came to Madison from North Carolina in 1882. He was a minister-doctor, an elderly man of 66, who had ridden the bridle paths of the Southland for thirty-eight years and had ministered to soul and body. He was neither an educated minister nor educated doctor, but he was faithful to his patients and had a large following among Virginians in this county. After a few years he moved to Blaine county, then just being settled, and died there, I believe.

Dr. W. F. COLLINS came to Madison from southwestern Iowa, Shenandoah, I believe, in 1883. He had practiced in Indiana thirteen years. He was not a graduate, but, I believe, was a veteran of the Civil war. He never acquired any considerable practice and after a few years moved back to Iowa. For a time he owned and lived on a farm east of town, now known as the Weiland place.

DR. J. H. MACKAY came to Madison in 1883 or 1884. He was a recent graduate of the Chicago Homeopathic Medical school. He was in some respects a brilliant but an erratic character. He married a Madison girl, a Miss Sylvia Johnson, from whom he was afterward divorced. At one time he was editor of the Madison Reporter, a Democratic organ. Through the influence of Senator Allen he was appointed superintendent of the Norfolk State Hospital in 1896, a position which he resigned under some pressure, a year later. He later practiced in Norfolk and finally went to Texas where, in Houston, he died in January, 1922. At one time he was editor of a homeopathic medical journal published in Omaha.

DR. J. B. HAWK went to Madison from Emerson, Ia., in 1884. He was a graduate of a Homeopathic medical school. He remained only about six months and then moved to Grand Island. I understand he died many years ago.

DR. W. F. HUTCHINSON came to Madison from Bridgeport, Conn., about 1886 or 1887. Previous to coming to Madison he had been a fulminate mixer in the Union Metallic Cartridge company works at Bridgeport. He had a diploma from a college at Keokuk which was afterward found to be bogus. He also claimed to be a Fellow of the Royal College of London. He claimed to be a specialist in diseases of women. He became associated with Dr. Bridenstine and later purchased Dr. Bridenstine's equipment and good will. He left Madison about 1891 and moved to Minneapolis where he died.

DR. CHARLES E. GOSSARD, a half brother of the late Senator Allen, came to Madison to succeed Dr. Mackay when the latter was appointed to the Norfolk State hospital in 1896. He practiced here a number of years and is now located at Topeka, Kan. He was a graduate of the General Medical College, Chicago, 1883.

DR. E. N. SMART came to Madison from Humphrey in 1894. He was a graduate of Drake University College of Medicine, 1884. He had been instructor of anatomy at his alma mater. For many years he enjoyed a large practice in the community. He remained active until his death which occurred suddenly April 17, 1927, aged 71 years. He had taken much interest in the collection of antiques of which he left a large and valuable collection.

Dr. G. C. WEBER located in Madison and registered in 1890 as a graduate of the Medical College of Heidelberg, 1856, which was probably not true, since he did not display common knowledge of medicine. He came to Madison from Humphrey where he had been for a short time. He moved to Blair from Madison after a few years' residence.

So runs the "Who's Who" of the early day Madison county physicians, who pioneered, and pioneering suffered with other pioneers. They gave the best of their talents to a pioneer community which in return has ever honored them.

*Revised and Republished from The Norfolk Daily News.

"COMMON COLD" VACCINES

The nearest approach to a final proof that infections of the upper respiratory trace usually grouped under the term "common cold" are due to an unknown filtrable virus has been made by Dochez and his co-workers. This unknown filter passer is not contained in any currently exploited "common cold vaccine". (*Jour. A. M. A.*, January 18, 1930, p. 189).

CLEAN BILL OF HEALTH

"Has your husband any hobbies?" asked the neighbor who was calling.

"No," said Mrs. Tuggle, "he has rheumatiz a good deal, and hives now and then, but he ain't never had no hobbies."—N. Y. C. Magazine.

DERMATOLOGIC CLINICS

ALFRED SCHALEK, M. D.,
From the University of Nebraska, College of Medicine,
Omaha, Nebr.

Case 7. The patient, a man of 55 years, previously in good health, presents skin lesions which began 4 months ago and consist of symmetrical extensive pigmentations, most pronounced on the abdomen and the lower extremities. Within these pigmentations areas of different sizes have developed, which are white, dense and tightly adherent to the tissues underneath, a condition aptly termed as "hide bound". Subjective symptoms are not complained of, except slight itching and easy chilling.

We have to deal here with a rare skin condition, a diffuse scleroderma. Its etiology is not known. Rheumatism, exposure to cold, exhaustion, and nervous disturbances at times precede the disease and may have some influence. In a number of cases changes in the thyroid gland have been observed, in others the suprarenals, the pituitary, and other ductless glands were affected and the supposition that scleroderma is of endocrine origin is well founded. The Wassermann has been found positive a few times, but this may be considered incidental. The most generally accepted theory is that the condition is a trophoneurosis, dependent on changes in the central nervous system.

The pathology is a sclerosis due to endarteritis and hypertrophy of connective tissue, supplanting the fat in the skin. This connective tissue is densely packed, converting the skin into a hard immobile mass. The lumen of the blood vessels is constricted from infiltration with small round cells and thickening of the media and intima.

The disease may begin slowly or rapidly, either with swelling and infiltration or, as in this case, with yellowish brown pigmentations. It may remain limited to a small area or spread over the whole body. The affected parts become white, rigid and have a wooden appearance. All the tissues, the skin, muscles and bones seem to be glued together. The joints become stiff, the face mask-like, the fingers like claws. Due to the extreme stretching of the tissues ulcerations are common. The prognosis as to a cure is uncertain. The disease may remain unchanged for years and then in a few rare instances recovery may take place, or it may be steadily progressing, atrophying the skin and the muscles, ankylosing the joints and interfering with respiration and other functions. This last type is fatal, which is usually brought on by some intercurrent affection.

Our treatment of this patient will be directed towards improving the nutrition of the skin with systematic massage with oils. We will try ultraviolet light exposures short of causing a dermatitis. Internally we will give him tonics and cod-liver oil. Thyroid gland extract is of benefit, if we find changes in this gland.

Case 8. This man, 40 years of age, comes to the Clinic with an extensive eruption on his chest, abdomen, and flexor surfaces of the arms, which appeared suddenly a few days ago. He looks pale, ill, and has a slight fever. He is suffering from headache and has lost weight. The lesions are numerous, discreet, light pink, round macules about 1-4 inch in diameter on an otherwise smooth normal skin. They pale on pressure being produced by circumscribed hyperaemias.

This whole ensemble of a systemic disturbance combined with the roseola has at times been mistaken for walking typhoid. Examination of the rest of the body of the patient shows two indurated moist erosions on the glans penis and the opposite inner side of the prepuce. The inguinal glands are slightly enlarged and hard. The sores are typical chancres and, with the macular eruption, give a diagnosis of syphilis. Without the skin manifestation we would have made certain of the diagnosis with a dark field search for spirochetes. I wish to say a few words about the dark field examination. The mistaken idea prevails that it can only be made in a laboratory by an expert. With a few extra parts which can be fitted to every microscope and with a little training the necessary skill is easily acquired. Knowing that the prospect of a quick cure is best at the earliest discovery of the infection and also the difficulties of recognizing clinically many lesions as chancres, the dark field examination for spirochetes should become as much a routine as looking for gonococci in a suspicious urethritis. We have here a case of a recent infection with syphilis, probably ten to twelve weeks ago. Approximately 4 weeks ago the chancre appeared. A little later the patient began to feel sick and in the last few days the rash broke out, the whole making a typical picture of the beginning of syphilis. We used to call the time between the appearance of the chancre and the skin eruption the second period of incubation, but the fact is that the systemic involvement begins with the chancre or very shortly afterwards. This may or may not be followed by skin manifestations. A record shows that 60 per cent of patients found to have syphilis in later life did not give a history of early skin eruptions. Personally I believe that the majority of patients have at least one skin rash, the macular syphiloderm. It must be remembered that this is often so light in color and gives so little discomfort, that it is easily overlooked. The rather severe systemic disturbance, the only period in the course of syphilis in which we see an acute general intoxication, is due to the system being flooded with toxins, before it has had time to adjust itself with a partial immunity.

An intensive treatment in this early stage has almost a 100 per cent chance of perfecting a cure. Fournier's maxim "strike hard, quick, and often" still holds good. Beginning with a small dose of salvarsan, in order to prevent a too violent reaction and to study any idiosyncrasies, we will quickly increase it to the maximum strength and give it in as short intervals as it is safely possible. The chancres need no special medication, except to keep them clean and keep them covered with an antiseptic solution. The macular syphiloderm which disappears spontaneously, even without treatment, will do so much faster with it. Having ascertained that the patient's wife had syphilis for some time, we shall insist that she is taken care of at the same time, to free her from the disease and to prevent re-infections which are by no means as rare as was believed at one time. We will warn the patient that just now he is in the most contagious stage and that he must take every precaution against infecting others.

BULLETIN FROM THE LABORATORY OF CLINICAL PATHOLOGY, BRYAN MEMORIAL HOSPITAL

Staff Meeting, Dec. 13, 1929.

Miles J. Breuer, Lincoln, Nebr.

Clinical Laboratory Procedures of Value in Dealing With Pernicious Anemia.

I. Diagnosis.

A. Blood.

1. Erythrocyte count,

2. Leucocyte count. Both matters of routine.

3. Differential Count (Schilling type is advisable).

a. A "shift to the right" is usually found, indicating exceptional maturity of the free leucocyte forms.

b. The differential count accomplishes the differentiation from the early types of leukemia.

c. The eosiniphile percentage is important; an increase in eosinphiles suggests animal parasites; an absence of eosinophiles, suggests the same thing, because of exhaustion of the supply.

4. Color index is always high in P. A. and rarely high in any other condition. As hemoglobin values obtained with the Dare type of hemoglobinometer are unreliable for this purpose, clinical men are requested to specify when they suspect pernicious anemia, so that the Duboscq type of colorimeter may be used, and the hemoglobin determined in mgm per 100 cc. This latter procedure is not used routinely for hemoglobin.

5. Diameter count. By means of a micrometer eyepiece, the diameters of from 100 to 500 cells can be measured, and the percentages of the various cell-sizes tabulated. In P. A. there is a predominance of the larger cells.

6. The poikilocyte percentage may be obtained by counting the number of cells per 100 that are deformed more than is seen in the normal smear. This percentage is high in P. A.

B. Gastro-intestinal tract.

1. Achylia gastrica. There is a low acidity, usually an absence of acidity of the stomach contents in this condition. The indicator "neutral red" is of considerable assistance in establishing anacidity; if injected intravenously, it appears in the gastric juice in 15 minutes, except in cases of achylia; it serves to recognize true achylia.

2. A careful search of the stools and of the lower bowel with the sigmoidoscope ought to be made in each case, for animal parasites.

C. Pernicious anemia ought never be diagnoses on laboratory findings alone. There is a definite clinical triad, of blood findings, gastro-intestinal findings, and neurological findings, necessary for the diagnosis.

The blood picture does not serve to establish pernicious (Biermer's) anemia, as the same blood picture, that of a megalocytic hyper-regeneration, is found in any condition in which there is a constant severe drain on the hematopietic tissues, such as:

Bothriocephalus latus infestation,
Ankylostomiasis,
Leucanemia,
von Jakach's anemia,
Sprue,
Chronic Malaria,
Severe amebiasis,
Syphilis of bone marrow,
Carcinoma.

II. Treatment.

A. Regular erythrocyte counts.

B. Regular determinations of hemoglobin. For this purpose the Dare type of instrument used for routine hemoglobin determinations is unreliable. Please specify that the case is pernicious anemia, or that hemoglobin is desired in mgm. 100 cc.

C. Reticulated erythrocytes appear when the patient's blood begins to regenerate rapidly, and their percentage can be estimated with the aid of a vital stain, like brilliant cresyl blue.

D. Nucleated erythrocytes appear in blood smears, and are also an index.

ANXIETY

A man with a little black bag knocked at the front door.

"Come in, sir, come in," said the father of fourteen children, "and I hope to goodness you're a piano-tuner."—Applesauce Chronicle.

OUR FRUITFUL LANGUAGE

A girl named Anna showed her raisins when she made a date with a prune named Bartlett, for whom she didn't care a fig. She is said to be a peach and they make a Bartlett pair. She is the apple of his eye, and while she has a cherry disposition, she frequently hands him a lemon. This is plum wrong and he ought to ban Anna, but our saying so is fruitless.—Koch's Messenger.

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NOTICE OF PROPOSED AMENDMENT TO CONSTITUTION

It is proposed to amend Section 3 of Article VIII of the Constitution of the Nebraska State Medical Association to read as follows:

"Except that the Councilors shall be elected by a majority vote of the delegates present from that Councilor District at the meeting of the House of Delegates on the morning of the last day of the general session."

NEW COUNCILOR

Dr. W. R. Boyer, Pawnee City, has been appointed councilor for the Third district, vice Dr. Claude P. Fordyce resigned. The appointment holds until the annual meeting in May when a councilor will be elected for the unexpired term as well as for a full term.

APRIL, APRIL

"April, April,
Laugh thy girlish laughter;
Then the moment after,
Weep thy girlish tears!
April, that mine ears
Like a lover greetest,
If I tell thee, sweetest,
All my hopes and fears,
April, April,
Laugh thy golden laughter,
But the moment after,
Weep thy golden tears!"

AN INTROSPECTION OF OUR ORGANIZATION

"With malice toward none and with charity for all" the writer aims to point out a dangerous feature of the Nebraska State Medical Association, in vogue at the present time.

It relates to the duplication and triplication of offices in one person. Scan the Roster of Officers on the last reading page and you will at once see that at least four members hold several offices and committee appointments. They are thoroughly capable and will do full justice to each and every position occupied by them. The point sought to be made, however, is that there should be a wider distribution of official duties among the membership to compel greater interest in organization work and to forestall the inevitable charge of bossism, centralization and czarism, if long continued.

The Nebraska State Medical Association has never functioned better than at present and the general feeling toward the association has never been better—and every member wants this feeling to continue.

Many organizations have found it desirable to distribute official duties among as many of the membership as possible to gain wider interest and influence and our organization will do well to heed the policy of others and apply the principle to our own work. The more members put to work, the greater the association's influence and cohesion.

The writer objects to nothing: he is pointing out a possible danger.

THE DUES ARE COMING IN

The Madison Five County Medical Society is a loosely formed confederation of five county societies—Madison, Stanton, Pierce, Antelope and Knox. Each county maintains its organization for the purpose of representation in the state association, but the five societies are federated for the greater benefits to be derived from scientific work of a larger body.

At the recent meeting, February 25, the secretary, who collects all the dues, reported that of a possible 68 members, 62 had already paid their dues for 1930. Last year the membership was 64 out of a possible 68.

The secretary-treasurer of the state association reports that the number so far paid is quite a little ahead of the number paid at the corresponding time last year.

On the face of this it looks as if interest in medical organization were growing. Thinking men realize that the future of medicine is wrapped up in organizational effort.

"HISTORY OF MEDICINE IN NEBRASKA"

The long-awaited History of Medicine in Nebraska is off the press and by the time this number of the *Journal* reaches the readers no doubt all subscribers for the history will have been supplied with their copies. Dr. A. F. Tyler, Editor, and Mrs. Ella Fleischman Auerbach, compiler, are to be richly complimented for the work done in the production of the history.

The volume is an octavo of 662 pages, in 10 and 8 point type on good paper and bound in attractive blue pebble fabricoid.

The subject is treated under the following heads: Early History, Pioneers, Physicians in Politics, War Service, Publications, Scientific Achievements, Colleges, Organizations, Hospitals, Medical Arts Building, Directory of Nebraska Physicians. The book has no index which at first though seems a serious handicap, but really is not, when the general scheme of the work is once understood.

The book begins with the thrilling story of the arrival, September 26, 1819, of the first white men, some government troops, via steamboat up the Missouri river on the site of Ft. Calhoun, Surgeon Gale, medical officer; of the development that winter of scurvy, nearly 500 soldiers ill and 157 deaths; of the marriage of Surgeon Gale to Ni-Ku-Mi, a bright Indian maiden, who bore him a daughter, Mary, who at maturity, married Joseph La Flesche, chief of the Omahas, and whose daughter, Susan, became in the course of years the once well-known Dr. Susan La Flesche-Picotte of Walthill, the only Indian woman ever to achieve a medical degree as well as prominence in medicine, and having a memorial hospital named for her at Walthill.

The early history of Omaha and Nebraska brings into prominence Dr. Enos Lowe and Dr. George L. Miller, followed later by Drs. J. P. Peck, Augustus Roeder, Gilbert Monell down to J. H. Peabody, S. D. Mercer, Harvey Link of Millard, L. J. Abbott of Fremont, R. R. Livingston of Plattsmouth, Alexander Bear of Norfolk and others.

The book contains hundreds of cuts of physicians, living and dead.

There are, of course, typographical errors, some errors of dates and several transposed sentences; but on the whole it is a splendid production and should be in every doctor's library.

THE MINNEAPOLIS MEETING

The Fourteenth Annual Clinical Session of the American College of Physicians was held at Minneapolis, February 10th to 14th. The mornings were devoted to clinics and demonstrations at the various hospitals. The afternoons were devoted to scientific papers and lectures. The clinics were varied and satisfied all of the men practicing the various divisions covering Internal Medicine, namely: Medicine in General, Pediatrics, Neurology, Gastro-Enterology, Cardiology, Tuberculosis, Metabolic Diseases, X-ray, etc.

The committee arranged excellent clinics which were given by the local professors of medicine, and also by visiting men of prominence. The heart clinics had an abundance of material, and again emphasized the ever increasing problem of rheumatic fever and its chronic sequences, especially mitral stenosis. I feel that it would not be amiss for our various councilor meetings to have a symposium on this subject to keep the profession of our own state awakened to the far reaching and progressive nature of mitral stenosis.

Dr. Epplen demonstrated the wonderful results obtained from the use of stramonium in post-encephalitic Parkinson's disease. It seems marvellous what can really be accomplished by the use of this drug in these miserable sufferers.

The value of sympathectomy in various diseases was again emphasized by the Mayo group. O'Leary described its value in scleroderma. Rowntree showed a marvellous reel demonstrating its remarkable results in polyarthritis. Sympathectomy gives us another hopeful weapon against this progressive malady. He also opened the eyes of the profession in general to the fact that proliferative arthritis might not be entirely an infectious process. The other uses of sympathectomy are in Raynaud's Disease, Hirshsprung's Disease, and Berger's Disease, all of which are greatly benefitted.

Demonstrations and lectures on undulant fever were of interest and the profession were again warned to constantly keep it in mind, lest mistaken diagnoses of intestinal grippe, atypical typhoid, miliary tuberculosis, subacute endocarditis, sepsis, etc., will be made.

The entrance requirements are constantly increasing, because the applications are getting far too numerous. All applicants must now first accept an associate membership for one year, after which, by presenting proper histories, and autopsy reports, entrance to the college may be gained.

If, after five years, an associate has not given evidence of sufficient progress to be admitted to the college, he will be automatically dropped.

The next annual meeting will be held in Baltimore. It behooves all of us to make plans to attend this meeting because it promises to excel all former sessions and affords an excellent opportunity for postgraduate instruction.

The Minneapolis meeting was well attended, and in the vernacular of the present day, "A good time was had by all".

—**Adolph Sachs, M. D.,**
Governor Nebraska District.

MOTION PICTURES FOR MEDICAL INSTRUCTION

The value of motion pictures for medical instruction is gradually becoming more appreciated. For the student they can never replace experience gained from personal contact with disease, nor can they supplant the present well established methods of teaching medicine. But as an adjunct to the methods in vogue at present, by facilitating the instruction, conserving the time of instructors and students, and by economy of materials, they are of inestimable value. Naturally such statements presuppose high grade production. Accuracy as to scientific detail, good cinematographic technique, and the best of photographic quality are primary requisites. With these qualities incorporated motion pictures acquire considerable value in all branches of medical science.

For the medical student and the postgraduate student motion pictures produced primarily for lecture purposes can be used with the greatest success. They have the advantage over the usual lectures that innumerable repetitions are possible, permitting the student to study the subject until he has acquired a thorough understanding of the facts presented. Furthermore, most of us are visual minded with the result that by this method of presentation the subject matter can be digested and assimilated more rapidly.

From the surgical standpoint, the motion picture can bring to the student and profession at large the work of the outstanding surgeons. Every one will admit the limitations of the motion picture for operative demonstration, and no one will presume to claim that surgery, as such, can be taught by motion pictures; but motion pictures of certain operations, carefully selected with regard to their adaptability to photography, can demonstrate successfully many of the fundamentals of surgical technique as practiced by leading surgeons. Comparison of differences in the details and mechanics involved can serve as an introduction to the beginner, and leads to a broader and more comprehensive understanding of the subject for the more advanced student. By this method the best work can be available to all at present and in the future, and aside from purely historical and sentimental considerations, such records will have a very practical value for posterity.

For physiologic and pathologic demonstrations, the motion picture is most practical. An experiment once satisfactorily performed and photographed endures for all time, making further repetition unnecessary. Motion pictures of such experiments present the essential features in a minimal amount of time, and, for instructional purposes, eliminate the uncertainty coincident with any experimental demonstration. Without any preliminary laboratory preparation students can see the experiment at any time and as often as desired, to study it to their utmost satisfaction. These features are a distinct advantage to the student as well as the instructor. In addition there results a tremendous economy in time and material. By the skilful use of carefully prepared animated drawings many physiologic processes and pathologic reactions, not readily discernible, can be graphically shown. Many of the more delicate reactions, demonstrable only to individuals or small groups with the greatest difficulty, can be readily shown and easily understood. Phases of this work which do not lend themselves well to actual photography can also be presented by such drawings, making the subject complete in all details.

In microscopic work for instruction and research purposes, microcinematography has unlimited possibilities. The introduction of the microscope opened vast unknown fields to exploration. The moving picture camera, applied to the eye piece of the microscope, advances such exploration by making possible a study and analysis of the motion of microscopic life. By the stop motion camera, or the popularly known slow motion picture, the development, growth, and life processes of microscopic life can be photographed and studied. Whereas formerly the scientist spent hours and days constantly at the microscope to describe phenomena occurring on the microscope stage, the motion picture camera, with suitable mechanical devices, cannot only see the processes as they occur, but gives a permanent record which all can see, a record available for all time. The value of such an advance in the field of research can readily be appreciated. For the investigator many tedious hours at the microscope are eliminated. There results an increased accurancy of results due to minimizing the human element, always subject to error. The investigator can repeat his experiment before his own eyes and the eyes of others innumerable times without all the difficulties of actually repeating the experiment. There is available a permanent record. For the student such records present facts which formerly he could not visualize except through his imagination, stimulated by lengthy descriptions. As applied to bacteriology, parasitology, embryology, and allied subjects, such films may be considered treasures.

Appreciating the value of motion pictures for medical instruction, whether for the student or postgraduate, Eastman Teaching Films, Inc., in collaboration with the American College of Surgeons, has undertaken productions along the lines described. Improved technique, improvement of subject content, and careful scientific supervision combine to make these films preeminent in the field of medical motion pictures. It is the determination of their proper application which, to a large extent, governs the production of Eastman Medical Films.

SCHOOL TEACHERS AND PHYSICAL EXAMINATIONS OF PUPILS

In reference to the public activities of the Nebraska State Medical Association, the statement has been made on several occasions, in public address in and out of the state, has also appeared in the *State Medical Journal* and the *Bulletin of the A. M. A.*, that "the law of the State of Nebraska requires that every school teacher shall make a physical examination of her pupils during the first months of the school year and send a report of her observations to the parents". This assertion is too broad it seems to me and creates the wrong impression in the average lay mind and the profession as a whole. Fortunately for the teacher and pupils as well, it is true in part. Certainly I can find no law on our statutes that requires a school teacher at any time of the school year to make a physical examination of a pupil. And, even so, the will and ability are diverse.

Mere observation of a defect of sight, teeth, enlarged tonsils, or a mouth breather with adenoids should not be construed as a physical examination.

I presume that the writer or speaker has in mind, Section 6536, the Compiled Statutes of Nebraska for 1922, which was amended in 1923 to read as follows:

Section 6536. Teacher to Examine Children.—It shall be the duty of every teacher engaged in teaching in the schools of the state, separately and carefully to test and examine every child under his jurisdiction, except as herein provided, to ascertain if such child is suffering from defect of sight or hearing or diseased teeth, or breathing through its mouth. If such test determines that any child has such defects, it shall be the duty of the teacher to notify, in writing, the parent of the child, of such defect and explain to such parent the necessity of medical attendance for such child. Whenever a child shall show symptoms of any contagious or infectious disease such child shall be sent to his home immediately or as soon as safe and proper conveyance can be found and the board of health or school board or board of education shall be at once notified. Provided, however, that no child shall be compelled to submit to a physical examination by other than the teacher, over the written objection of his parent or guardian, delivered to the child's teacher, provided, however, that such objection shall not exempt the child from the quarantine laws of the state nor prohibit an examination for infectious or contagious diseases.

—Henry Farrell.

EDUCATIONAL BACKGROUND OF 63,000 STUDENT NURSES

The following is taken from a report in the *American Journal of Nursing*, February, 1930. The figures were tabulated by the Grading Committee of Nursing Schools from a nation wide study of nursing schools:

Nebraska leads all other states in the union in the per cent of student nurses reported as having had four years or more of high school education before entering training.

Second comes Oregon; third, Montana. In each of these three states 90 per cent or more of the student nurses so reported have finished four years of high school. At the foot of the list come New Jersey and Delaware with 46 per cent, and Arkansas with 41 per cent.

How much do students need to know before they are ready to enter nursing school?

—F. J. Murray.

THE GENERAL PRACTITIONER

As many of my readers know, I am an ardent admirer of the General Practitioner, especially those of the country variety. Here comes in a poem on the subject from one of my correspondents. The ideal seems higher than Kipling's, but I know men who illustrate it.

IF

If you can change tires at four below at four a. m.,

If you can set a fractured femur with a piece of string and a flat iron and get as good results as the mechanical engineering staff of a City Hospital at ten per cent of their fee;

If you can drive through ten miles of mud to ease the little child of a deadbeat—

If you can do a podalic version on the kitchen table of a farmhouse with husband holding legs and grandma giving chloroform—

If you can diagnose tonsillitis from diphtheria with a laboratory forty-eight miles away,

If you can pull the three-pronged fish-hooked molar of the 250 lb. hired man—

If you can maintain your equilibrium when the lordly Specialist sneeringly refers to the General Practitioner—

Then you are a real Country Doctor!

—**William Lyon Phelps in Scribners.**

COMMON COURTESIES DUE YOUR FAMILY PHYSICIAN

He is only an individual with the patience and endurance of any other human being. I am certain that you would not, except in case of emergency, work your horses seven days and nights of each week and still expect them to give you good service. Why, then, is it that you treat your family physician with less consideration than you do your beast of burden? It is because each patient considers that he is the only patient the physician has and in doing this you are not only thoughtless of your physician but equally inconsiderate of your fellow man.

Your physician must have time to eat and time to sleep and he should have some time for recreation, else he will not be alert and clear minded.

His Sunday, so far as possible, should not be disturbed. He enjoys going to church, being with his family, resting and relaxing for the work that is to come.

When you go to a physician's office at his regular meal time, remember that you are keeping him away from his meal and the only time that he may have contact with his family.

If you go to a store for your needs there is always a clerk who can take care of you, but when you go to a doctor's office, there is but one and only one you care to see.

If you think that you are going to need a physician any time during the day, get your call in early so that he can plan his work for the day. You will get better service and the doctor will get more rest.

Never call a physician after six p. m. unless it is an emergency or a sudden change in the condition of the patient. If it is a case of this type you will find the "Old Boy" ready and happy to render the service.

The thing that is trying, is to be called to see a patient at night who should have had the physician during the day. Never call a physician during wee small hours of the night to see someone who is not ill.

Do not call a physician too early in the morning. He has perhaps been out late and would like to take a little rest before reporting at the office. Do not demand a personal phone conversation when an office girl or some member of the physician's family could take the call just as well.

The banker can take his afternoon off for golf, the merchant can go fishing, the minister can call on his parishioners, the lawyer can play his pinochle, but the poor old family "Doc" must be on the job all the time.

If you will remember the afore mentioned facts you will have a better physician and he will be with you longer. Thank you for your patience and for my patients, I am—Your Family Doctor.

—**Wilsonville (Nebr.) Review.**

Dear Reader.

The Journal and the Cooperative Medical Advertising Bureau of Chicago maintain a Service Department to answer inquiries from you about pharmaceuticals, surgical instruments and other manufactured products, such as soaps, clothing, automobiles, etc., which you may need in your home, office, sanitarium or hospital.

We invite and urge you to use this Service.

It is absolutely free to you.

The Cooperative Bureau is equipped with catalogs and price lists of manufacturers, and can supply you information by return mail.

Perhaps you want a certain kind of instrument which is not advertised in the Journal, and do not know where to secure it; or do not know where to obtain some automobile supplies you need. This Service Bureau will give you the information.

Whenever possible, the goods will be advertised in our pages; but if they are not, we urge you to ask the Journal about them, or write direct to the Cooperative Medical Advertising Bureau, 535 N. Dearborn St., Chicago, Illinois.

We want the Journal to serve you.

EDITORIAL PARAGRAPHS

New Ads this month are The St. Louis Clinics, Holland-Ranto Co., and Graduate School of Pediatrics. Read the ads!

We are asked to announce the second issue of *The Hebrew Physician* (*Harofeh Hoibri*), published in New York City under the editorship of Dr. Moses Einhorn. If there is any excuse for this foreign language journal this editor is too stupid to sense it.

Negroes are relatively immune to yellow fever; the Japanese to scarlet fever; the Chinese to tetanus; the Mexicans have a mild form of smallpox. Small-pox is very devastating to North American Indian; the Negro is extraordinarily susceptible to tuberculosis.

The United States Public Health Service says a conservative estimate of the prevalence of leprosy in continental United States places the number of cases at approximately 1200. At the National Leprosarium at Carville, La., 306 cases are at present under treatment.

During April the National Tuberculosis Association will make an effort to arouse the public to the significance of childhood tuberculosis. In connection with the campaign, which is to be strictly educational, a manual has been produced, "The Childhood Type of Tuberculosis".

Dr. E. M. Wyche of London is reported as saying that radiation with ultra violet rays is not desirable for children with active tuberculosis and for a small number who appear unduly sensitive to the rays. It "is not a substitute for sensible home management, good food, sunlight, and fresh air."

The United States Public Health Service reports that Prof. Bunting (of the University of Michigan) found that every child examined in a public school had dental caries, while in an orphan asylum 65 per cent were entirely free from the disease. The latter had an abundance of milk, vegetables, and a minimum of sugar and candy.

If your dues are not now paid you are not entitled to medical defense, neither are you entitled to the *Journal* and if the *Journal* reaches you it is by sufference: not by right. Most members have paid their dues before this time. A few have overlooked the matter and some others have neglected their plain duty. If you are delinquent now is the time to do your duty to yourself and to the association.

The National Society of Penal Information as a result of a special health study of prisons just completed says the first comprehensive survey reveals causes of mental and physical strain are, the medical department of many prisons are still a part of the spoils system, that there is inadequate ventilation and lighting, monotonous diet, that there is minimum of recreation. In addition to overcrowding and idleness.

It is said that over $60,000,000 is spent annually in the United States for dentifrices, while the best scientific minds say they have neither antiseptic, germicidal nor cleansing value, not possessed by the tooth brush. Then there is the tooth brush—what is to keep it from harboring millions of bacteria after its first day's use and if you stick it into carbolic acid or boil it to sterilize it how many times will you use it?

Acute cyanide poisoning from hotel silver polish containing sodium cyanide is reported in the *Journal A. M. A.*, March 1. Apparently the poisoning occurred in guests who were the first to use the silver immediately after it was polished. It appears to have occurred at a number of hotels widely separated. None of the cases proved fatal, although, great exhaustion occurred and a number were ill for as many as five days.

In this number appears an historical article, "Some Early-Day Madison County Physicians". Attention is called to this, because, while the article has for the most part a local appeal only, it serves as an example of what can be done and should be done in every county in the state very soon and the article is here published to inspire, if possible, others to undertake similar tasks. The word tasks is used advisedly, for it is no easy matter to collect material such as is contained in the article mentioned. It takes time, work, correspondence, research, and some travel to collect it.

A masterful talk was given before the Norfolk Rotary club and also broadcasted over KOIL, Council Bluffs, by Dr. Alfred J. Brown, Omaha surgeon, on "The Cost of Medical Care" in which he brought forward the proposition that the average family needed hospital care once in three years and advocated budgeting against this probability. He urges people of moderate means selecting the less expensive rooms and wards as desirable, rather than the accommodations beyond one's means—the medical service being identical in either case. He showed by comparison that hospital care has not risen in price in proportion to everything else and said modern methods of treatment had decreased the number of hospital days for each patient approximately 33%.

The Bloomfield (Nebr.) experiment with the cash basis in all business deals, including medical and dental service, has now been going on for several years and the results seem to fully justify the hopes of those responsible for its inauguration. The system seems to have been inaugurated by a physician who decided he would rather earn less and get what he earned.. He discounted all his fees 10% on the cash basis which at once impressed business minded folk. The Farmers' Union Store had had a business turnover the preceding year of $125,000 but found itself with $10,000 in accounts at the end of the year. This store went on a cash basis. Others gradually followed until the entire town was on a cash basis and has so remained. And they say, "Business is good, thank you".

The International Medical Club of New York

THE CIAN

was started by a group of foreign medical graduates residing and practicing in the state of New York, with the active participation of prominent American Medical graduates interested in the promotion of International Medical Relationship. The organization of the International Medical Club was justified by the sole fact that in New York State alone there are over 4,000 foreign born physicians and thousands of medical graduates from foreign universities. The foreign language medical societies, existing in New York City, are numerous and are as follows: Two Italian Medical Societies (Manhattan and Brooklyn), a Spanish, German, Russian, Hungarian, Greek, Celtic and others of less importance. Due to the fact that these foreign language medical societies were functioning independently with no contact between themselves and the American medical organizations, the International Medical Club had, as one of its objects, the establishment of relationship between these foreign medical groups and the American organizations.

THIS MONTH IN MEDICAL HISTORY

April, 1930

Jean Baudens was born at Aire, Pas-de-Calais, April 3d, 1804. He was Surgeon to the French Army in Algeria in 1830. He established a teaching hospital and taught surgery and anatomy in Algeria for nine years following this time.

John Abernethy was one of the leading surgeons and one of the most important London teachers of anatomy and surgery in the first part of the nineteenth century. He was born April 3d, 1764 and died April 28th, 1831.

Hugh Chamberlen, a celebrated English physician, was born in 1830. During his life time he revealed that an obstetric forceps invented by an ancestor, Peter Chamberlen, Sr., had been kept a family secret in his family for almost two hundred years. Hugh Chamberlen also proposed a scheme to make England happy by the issue of bank notes secured by landed property.

The first printing press in the American Colonies was set up at Charleston, Virginia, during the year 1730.

On April 22d, 1730, the first Public Library in New York City was founded.

Jean Fernel was a celebrated French physician of the period of Catherine de Medici. He received his doctorate from the Faculte de Paris in 1530, and published his celebrated Universa Medica in 1567. This work went through more than thirty editions. He was born in 1497 and died in 1558. He is the physician who is said to have been responsible for the advice to Catherine de Medici that enabled her to have ten children after having been supposed to be sterile from the age of fourteen to the age of twenty-four. Fernel was the recipient of a handsome present from Catherine upon the occasion of the birth of each of her children after this time.

Richard Bright, the celebrated English physician who gave the name to Bright's Disease, was born in 1789 and died in 1858. He was one of the students of the famous Sir Astley Cooper and in 1830 was physician to Guys Hospital in London.

Middlemarch, one of the prominent novels of George Eliot, was published in 1830. This novel contains one of the best characterizations of the doctor in all literature.

The Surgeon General, in reporting upon the health of the United States Army for five years just before 1930, says, "The aggregate of deaths" (from alcoholic intemperance) "in the tables furnishing these data is 1104, more than one-half of which are traced to that war against nature, which claims more victims than the most fatal epidemics — epidemics, the visitations of which are viewed with dreadful apprehensions, while this moral pestilence is continuously in our midst, almost unnoticed." The daily ration of spirits which had often consisted of one-half pint of spirits drunk under the supervision (!) of the issuing officer had just been abolished at this time.

NECROLOGY

Daniel G. Walker, Lindsay, Nebr.; College of Physicians and Surgeons, Keokuk, 1897; practitioner at Lindsay for upward of thirty years; member, Nebraska State Medical Association; died from the late effects of an old x-ray burn, March 9, 1930. He leaves a widow.

W. C. Wightman, Pasadena, Calif.; (retired); Washington University College of Medicine, 1881; practitioner at Wayne from 1884 to 1905; died March 9, 1930, aged sixty-nine years. Dr. Wightman had large land holdings in Wayne county and extensive oil interests at Signal Hill and other places in California and had acquired great wealth.

William L. Dayton, Lincoln, Nebr.; Northwestern University Medical School, 1881; resident of Lincoln for forty years, and pioneer specialist in eye, ear, nose and throat work at Lincoln; a forceful character prominent in Lincoln business circles; treasurer for six years of the American Academy of Ophthalmology; prominent member of the Nebraska State Medical Association for more than a third of a century; died February 28, 1930, after a long illness, aged about seventy-three years. A son and daughter survive. He was a native of Princeton, Ill.

Berthold C. Tiesing, Columbus, Nebr.; University of Jena, 1895; practitioner at Columbus for a third of a century; member, Nebraska State Medical Society;

grand medical examiner for the Sons of Herman; a forceful character interested in community life; director of the Columbus Community Orchestra; died March 18, 1930, aged about fifty-eight years.

NOGUCHI MEDAL

Phi Delta Epsilon, Alpha Chi chapter of the School of Medicine, Creighton University, is offering annually a gold medal to commemorate the scientific achievements of the late frater, Dr. Hideyo Noguchi, to a doctor of medicine who, by his writings, his public utterings, and his personal and communal activities, has advanced the cause of preventive medicine.

The award is open to men and women. The recipient must be a native of Nebraska or must reside in Nebraska at the time of the award.

The committee on the Award of the Noguchi Medal is composed of Dr. Herman von W. Schulte, Dean of the Creighton University Medical School, Dr. Charles W. McCorkle Poynter, Dean of the Nebraska University College of Medicine, Dr. Philip H. Bartholomew, Director of Health, State of Nebraska, Dr. J. Stanley Welch and Dr. Victor E. Levine.

The first award will be made in May, 1930.

AUXILIARY NOTES

The annual meeting of the Woman's Auxiliary to the Nebraska State Medical Association will be held at Lincoln, May 13, 14, and 15. Headquarters will be at the Lincoln Hotel.

Dawson county: Dawson County Auxiliary meetings are held once in three months. Registered nurses are included in these meetings. The special interest of this auxiliary is an educational campaign for diptheria immunization. This auxiliary also is interested in cooperating with the distribution of Hygiea in libraries and schools.

Douglas county: On February 24th a meeting of the officers and board of the Omaha-Douglas County Auxiliary met to approve the appointment of various committee chairmen. The officers and board are: Honorary Vice President, Mrs. C. W. Pollard; President, Mrs. G. W. Dishong; Vice President; Mrs. A. S. Pinto; Secretary and Treasurer, Mrs. J. A. Weinberg; Directors, Mrs. A. C. Stokes, Mrs. J. Harry Murphy, Mrs. F. W. Heagey, Mrs. W. P. Wherry; Publicity, Mrs. L. B. Bushman; Hygeia, Mrs. George Pratt; Activities, Mrs. W. L. Shearer; Courtesies, Mrs. J. F. Hyde; County Hospital, Mrs. S. McCleneghan; Membership, Mrs. H. von W. Schulte.

According to Article II of the Constitution and By-Laws of the Woman's Auxiliary to the American Medical Association, one of the main objectives of the organization is the cooperation of its members in those organizations which look to the advancement of health and health education. To further this objective, the service of auxiliary members on the health committes of other women's organizations is advocated.

Returns from a questionnaire sent out by the Chairman of Public Relations of the national auxiliary indicate that from fifty to seventy-five per cent of the members of our county units are members also of other organizations which do preventive or palliative health work. A majority of these women are active in Parent-Teacher Associations, Woman's Clubs, and American Legion Auxiliaries. In some instances health projects have been undertaken by these organizations through the influence of auxiliary members Glasses have been provided for children, winter clothing furnished, and arrangements made for necessary tonsil and adenoid operations. In Holt County the auxiliary is using the study-envelope material to put on health programs at meetings of Mothers' and Women's Improvement Clubs.

The Unversity of Missouri through its department of education is planning a three day institute on Child Development and Parent Education to be held June 26, 27 and 28. It is to be similar to that so successfully carried on for four years at the University of Iowa, to which people come from all over the country. There will be speakers widely known for work in child care and in mental hygiene of children, with many conferences on subjects of special interest to parents. Wm. Blatz of Toronto University, Ernest Groves of New York University, and Dr. Lois Hayden Meek of Teachers' College, New York, are prospective speakers. The movement is being sponsored by women's organizations of Missouri and nearby states. Mrs. George H. Hoxie, president of the Woman's Auxiliary A. M. A. endorses the Institute by testifying that the project is being worked out by efficient people along scientific lines.

In a talk before the Woman's Auxiliary to the American Medical Association, Mrs. Geo. H. Hoxie, President, expressed the hope that some plan might result from the work of President Hoover's Child Welfare Commission under which Federal and State Health Departments, the organized Medical Profession, and lay organizations might be able to co-operate for disease prevention and health promotion. She stressed three basic principles adopted by the auxiliary. (1) Self-education—education of our membership on the fundamental principles of public and personal hygiene which are evolving from scientific medicine. (2) Education of the public along the same lines in order to speed up the organization and efficient administration of full time health departments in both urban and rural districts. (3) Acknowledgement by lay women of the fact that health work is technical, and to be effective must be under technically trained people; and a willingness to work under the direction of the state and local official health deparments.

—T. H. R.

WOMAN'S AUXILIARY COUNTY OFFICERS FOR 1930

Cedar Five County Auxiliary—Pres. Mrs. A. E. Cook, Randolph; Vice-Pres. Mrs. P. F. Simon, Wayne; Sec.-Treas. Mrs. C. F. Phillips, Dixon.

Cuming County Auxiliary—Pres. Mrs. W. K. Riley, Wisner; Vice-Pres. Mrs. C. A. Pierson, Beemer; Sec.-Treas. Mrs. I. L. Thompson, West Point.

Dawson County Auxiliary—Pres. Mrs. R. S. Wycoff, Lexington; Vice-Pres. Mrs. H. M. Harvey, Gothenburg; Sec.-Treas. Mrs. A. W. Anderson, Lexington.

Dodge County Auxiliary—Pres. Mrs. W. Howard Heine, Fremont; Vice-Pres. Mrs. C. G. Moore, Fremont; Sec.-Treas. Mrs. R. C. Byers, Fremont.

Douglas County Auxiliary—Pres. Mrs. G. W. Dishong, Omaha; Vice-Pres. Mrs. A. S. Pinto, Omaha; Sec.-Treas. Mrs. J. A. Weinberg, Omaha.

Holt County Auxiliary—Pres. Mrs. F. L. Wilson, Stuart; Vice-Pres. Mrs. L. A. Carter, O'Neill; Sec.-Treas. Mrs. W. J. Douglas, Atkinson.

Madison Five County Auxiliary—Pres. Mrs. A. J. Schwedhelm, Creighton; Hygeia Chairman Mrs. H. L. Kindred, Meadow Grove; Sec.-Treas. Mrs. Geo. M. Hansen, Madison.

Lincoln County Auxiliary—Pres. Mrs. H. H. Walker, North Platte; Vice-Pres. Mrs. Joel Anderson, North Platte; Sec.-Treas. Mrs. Townsend Dent, North Platte.

Lancaster County Auxiliary—Pres. Mrs. John C. Thompson, Lincoln; Sec.-Treas. Mrs. C. H. Arnold, Lincoln.

NOTICE OF EXAMINATION FOR ENTRANCE INTO THE REGULAR CORPS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Examination of candidates for commission as Assistant Surgeon in the Regular Corps of the U. S. Public Health Service will be held at the following-named places on the dates specified:

At Washington, D. C.	May 5, 1930
At Chicago, Ill.	May 5, 1930
At New Orleans, La.	May 5, 1930
At San Francisco, Cal.	May 5, 1930
At Stapleton, S. I., N. Y.	May 5, 1930

Candidates must be twenty-three years and not over thirty-two years of age. They must have been graduated in medicine at a reputable medical college, and have had one year's hospital experience or two years' professional practice. They must satisfactorily pass oral, written, and clinical tests before a board of medical officers, and undergo a thorough physical examination.

Successful candidates will be recommended for appointment by the President, with the advice and consent of the Senate.

Request for information or permission to take this examination should be addressed to the Surgeon General, U. S. Public Health Service, Washington, D. C.

H. S. Cumming, Surgeon General.

THE SOCIETIES

The regular meeting of the **Omaha-Douglas County Medical Society,** January 28, 1930, was called to order by President Pollard.

The following members were unanimously elected to membership in the Society: Dr. J. H. Judd, Dr. C. P. Wagner, Dr. Kenneth C. Baker, Dr. Victor E. Levine.

The first paper of the evening was given by Drs. Sachs and Russum on Hemachromatosis and Iron Retention. Dr. Sachs discussed the clinical features of the condition which are characterized by cirrhosis of the liver, pigmentation of the skin and diabetes mellitus. The case described was that of a man age 26, who had symptoms of hypoglycemia with skin pigmentation on biopsy, based, the essayist thought on liver deficiency and hypertrophy of the Islands of Langerhans.

The next paper was presented by Dr. J. Jay Keegan on Cerebral Aneurism. Dr. Keegan brought out in the discussion that Cerebral Aneurisms occur in one per cent of brains examined and are the common cause of spontaneous meningeal hemorrhage. They occur most frequently in the region of the arterial circle of Willis, under forty years of age, and are not commonly associated with arteriosclerosis or syphilis. The etiology is explained on an anatomical basis and from septic emboli and arteritis. A suppositional diagnosis can usually be made at the time of rupture. Treatment is symptomatic or ligation of the internal carotid arteries. Six necropsy cases were reported.

Meeting of the **Omaha-Douglas County Medical Society,** Monday, February 17th, was opened by President Pollard.

The following members were unanimously accepted to membership in the Society: Dr. A. R. Everett, Dr. E. J. Kirk, Dr. S. E. Malomey, Dr. E. W. Landgraf.

The first speaker on the program was Dr. Frederick Epplen of Seattle. The subject of his paper was "Stramonium Treatment in Encephalitis." This paper was read by Dr. Lowell Dunn as Dr. Epplen was suffering from a cold. Dr. Epplen brought out the fact that stramonium in encephalitis is an unusually efficacious drug when given in large doses up to 60 or 90 minims three times a day. Symptoms of bradykinesia, masked face and tremor usually are alleviated by the drug. Motion pictures were shown to illustrate the marvelous results obtained by the essayist. It should be remembered, the speaker said, that this drug is not in any way specific for the disease but merely a symptomatic procedure, which should be continued indefinitely as long as the symptoms of encephalitis persist. Toxic symptoms from stramonium are nausea, mydriasis, excitability, gastric-intestinal disturbances and dryness of the mouth. Dr. Epplen also warned against substitution of belladonna for stramonium. At times he said it is necessary to give the drug in combination with scopolamine, 1/150 to 1/60 of a grain.

The next speaker on the program was Dr. N. W. Jones of Portland, Oregon, who spoke on "Chronic Hyperplastic Sinusitis in Relation to General Systemic Disease." Dr. Jones stated that he has traced sinus disease as the underlying basis for many systemic conditions. These conditions, he stated, cleared up more or less promptly by radical operation upon the antrum, ethmoid or sphenoid sinuses. The following conditions were described by case reports: suppurative bronchitis, chronic septic arthritis, severe anemia, chronic infectious arterio-sclerotic cases, weakness and nervousness and nervous tics.

Regular meeting of the **Omaha-Douglas County Medical Society,** February 25, was called to order by President Pollard.

The following Clinical Program was given:

Dr. A. E. Bennett gave the history of three cases of oculogyric crises following encephalitis and presented two of the patients.

Dr. G. Alexander Young gave the history of an "Unusual Compression Syndrome of the Spinal Cord" which was illustrated by slides and microscopic specimens.

Dr. Floyd Clarke had a small patient there and gave the history of "A Case of Hirschsprung's Disease." This was discussed by Drs. Young, McGuire, and Moon.

Dr. E. C. Henry gave a history and autopsy findings and also showed an autopsy specimen of "A case of unusual intestinal intussusception in a patient 78 years of age."

Dr. S. J. Carnazzo talked on a case of "Cholelithiasis and Double Cystic Duct" illustrated with x-rays.

Dr. G. W. Dishong presented an unusual "Neurologic case with complications."

Dr. James W. Martin presented case histories of two patients, one a Fracture of both os calces and the other a Fracture of the Spine. Slides and x-ray films of both cases were shown.

Dr. J. W. Langdon read a history and showed x-rays of a case of "Tuberculosis of the Cecum."

Dr. M. C. Howard reported a case of undulant fever. This was discussed by Drs. McGuire, and Floyd S. Clarke.

—H. M. Jahr, Sec.

On February 4, 1930, the **Lancaster County Medical Society** entertained Dr. S. W. Harrington and Dr. W. McK. Craig of Rochester, Minnesota. A dinner was held in their honor at the University Club at which about twenty-five guests were present. Following the dinner they addressed the society in the Sharp Building.

The first address of the evening was by Dr. Craig on "Spinal Cord Tumors". Using lantern slides and citing illustrative cases he outlined the general symptomatology of spinal cord pressure. Among these symptoms are pain below the level of the lesion, anasthesia below a usually well defined level and increased tendon reflexes. He outlined the types of spinal cord tumors in considerable detail. The laboratory diagnosis is dependent first, on the spinal tap which shows a block indicated by failure of pressure to rise on compression of the jugular veins. The fluid is yellow in color and small in amout. The second important diagnostic procedure is injection of lipiodol in the spinal canal. This substance diffuses through the canal up to the point of the block and shows a characteristic end at the site of the block. Treatment consists in laminectomy with removal of the tumor when possible. A very interesting and complete discussion of the entire subject was heard and the slide demonstrations of the x-rays following lipiodol were excellent.

The second address of the evening by Dr. Harrington on "Empyema and Other Surgical Conditions of the Chest" was also a lantern slide talk. Although he discussed tumors and tuberculosis and other surgical conditions, the most of the hour was spent in a discussion of empyema. Dr. Harrington advocates closed drainage as soon as the fluid has become purulent. This he accomplishes by intercostal thoracotomy or by partial resection of a rib and the introduction of closed drainage through this space. He believes that early drainage increases the probability of early complete recovery and attributes chronic empyema in many cases to delay in drainage. The closed drainage followed by irrigation should be continued for about ten days after which time a small cavity usually remains which will close with or without resection of the rib immediately over it. He illustrated his technique in his lantern slides, giving a very vivid description of his method of handling these cases. He also showed other slides illustrating thoracoplasty as used in tuberculosis and chronic empyema. He reviewed all of the cases of surgical disease of the chest seen at the Mayo Clinic in the past year. The one striking feature was the extreme low mortality in acute empyema, which was practically nil, and which he said he could hardly hope to attain again.

The society extended a rising vote of thanks to the doctors for their very excellent papers.

The regular meeting of the **Lancaster County Medical Society** was held February 18, 1930, Dr. George H. Walker presiding.

The first paper of the evening was read by Dr. C. V. Gibbons, one of the associate dental members of the society. This paper dealt with the teeth as foci of infection. The essayist outlined the types of dental infection and the methods of recognition. He advocated complete x-ray examination, together with transillumination and vitality tests in all cases where there is a search for foci or where prophylactic measures are being used to prevent the formation of foci. He stated that he felt that extraction is indicated whenever any of these tests indicate infection or nonvitality. He feels that it is much safer to have nonvital teeth removed whenever practical because of their incipient danger. In the discussion which followed by Drs. Chaloupka, Reinhard, Hompes, Askee and Wiedman it was brought out that x-ray does not always show the presence of an apical abscess and granuloma and the vitality tests are important in the diagnosis. It was felt by some members that nonvital teeth could in some cases be safely left behind.

The next paper of the evening was by Dr. J. E. M. Thomson on "Feet". Dr. Thomson read a very interesting paper devoted almost entirely to the prophylaxis of foot disability. In the introduction he emphasized the importance of foot disability in its relation to general conditions, such as headache, fatigue, backache, neuritis and so on. The most of the paper was devoted to care of the feet in the growing child. He emphasized first the importance of kicking movements in infancy and the danger of using too tight stockings during this period. He stated that shoes should not be used at this time for they only hinder the circulation and deform the feet, and stockings should be large and loose. When the child begins to walk, properly fitted shoes with soles extending well out beyond the feet and soft high tops should be employed. Care should be taken at all times that the stockings are not too tight. Careful bathing of the feet is essential. When the shoes become too small and tend to limit the muscle action or when the great toe touches the end, new shoes should be obtained. As the child grows older he should have at least two pairs of shoes so that the lining and leather may have time to dry out. The final period of danger in foot hygiene is during adolescence. During this time there is a tendency to want ill-fitting types of shoes, which lay the foundation for corns, callouses, bunions, etc. If the child can be safely guided through this period, common sense will determine the foot hygiene in later years. The paper was discussed by Drs. Cook, Brooks, Wiedman, Fahnstock and I. C. Munger, Jr.

The final paper of the evening was read by Dr. A. L. Smith on "Tachycardias". He stated that tachycardia was simply one of the many manifestations of heart disease and that the purpose of his paper was only to outline some of the recognized types of tachycardia. Using lantern slides he demonstrated the cardiac tracings, electrocardiographs and polygraphs in a number of cases of tachycardia. These illustrated paroxysmal tachycardia, fibrillation, flutter, pulse alterans and extrasystoles of various types. The paper was discussed by Drs. Flansburg, McCarthy, A. D. Munger and Knight.

A report was made by Dr. Hompes of the meeting of the Executive Council. The Council had reelected Dr. Welch as chairman and Dr. Hompes as secretary, Dr. Carveth was recommended as Custodian and Dr. Whitham as Editor of the bulletin. It was moved and seconded that the report be accepted. Motion carried.

—Roy H. Whitham, M. D., Secretary.

The February meeting of the **Madison Five County Medical Society** was held at the Hotel Norfolk, Norfolk, on the 25th, over a dinner attended by upwards of sixty members and their ladies.

Dr. Alfred J. Brown, Omaha, and wife, were guests of honor. Dr. Brown spoke on Goiter, following the trend of thought given in his series of articles on Goiter at present appearing in this **Journal.**

The annual meeting of the **Buffalo County Medical Society** was held at the Fort Kearney hotel, March 3, with a large representation of members. Dr. O. D. Johnson, Kearney, was elected president; Dr. R. S. Johnston, Kearney, secretary-treasurer; Dr. G. H. Bentz, Kearney, delegate.

The association is looking forward to an active year, with many matters of importance to the profession coming before them for consideration.

HUMAN INTEREST TALES

Dr. J. A. Waggener of Humboldt has now been in practice 54 years.

Dr. A. J. Smith has moved from Wood River to Oxford to practice.

Dr. J. C. Van Valin, for the past year at McCook, has located at Bridgeport.

Dr. B. F. Richards, Crawford, has been appointed assistant post surgeon at Fort Robinson.

A Lincoln dermatologist has been sued for $100,000 damages by a patient from whom he removed a birthmark.

The marriage of Dr. E. Lennemann of Tecumseh and Miss Marie Freiburg, of Clarkeville, Missouri, is announced.

Dr. R. A. Newton, for the past year in practice at Walthill, his located at Genoa in association with Dr. Homer Davis.

Dr. Kenneth E. Prescott has located at Long Pine and has been appointed division surgeon of the Northwestern system.

Dr. David Hilton spoke before the Lincoln Knife and Fork club recently on Poland. Dr. Hilton was given a decoration by the Polish government.

Dr. F. J. McRae, Albion, was called to appear in Federal court at Tucson, Arizona, as witness in a case growing out of war service in a training camp in Texas.

Service medals were awarded to Drs. Earl B. Brooks and John R. Bennett, of Lincoln, both majors in the Nebraska national guard. The medals were awarded for five years service with the regiment.

Dr. A. W. Anderson, Lexington, confronted with a sick call to an island in the Platte river while the river was in flood and gorged with ice, chartered an airplane and made the trip. E pur se muave!

Dr. C. D. Williams of Genoa was cleared of charges of unprofessional conduct at a hearing before the department of public welfare on the accusation of signing birth certificates in cases attended by his wife, not a physician.

THE IMPORTANCE OF LONG EXPERIENCE

"There is one thing about Mead, Johnson & Company I like," said the physician who had visited the Research Laboratory at Evansville. "They don't go off half-cocked. You never hear of any severe nutritional disturbances resulting from their infant diet materials. Before they put a product on the market, they study and test it with infinite patience, and very quietly.

"For example, they have been working with vitamin B for eight years and only now in the *Journal of the A. M. A.* for March 22nd are they publishing the fact that they evolved a vitamin B concentrate eight years ago.

"They have been working on a new form of Dextri-Maltose (with vitamin B) which they are about to market. I'll wager there won't be any diarrheas or other untoward results with this preparation. Mead, Johnson's research *before* marketing is too thorough."

PACIFIST'S ALIBI

"You're scared to fight."

"I ain't; but me mother'll lick me."

"An' how'll she know?"

"She'll see the doctor goin' to your house."—Washington Star.

SOLID IVORY

"Ouch! I bumped my crazy bone!"

"Oh, well, comb your hair right and the bump won't show."—Royal Arcanum Bulletin.

ROSTER OF OFFICERS—1930

F. S. Owen, Omaha, President	1930
K. S. J. Hohlen, Lincoln, President-elect	1931
Jos. Bixby, Geneva, Vice President	1931
A. L. Cooper, Scottsbluff, Vice President	1931
R. B. Adams, Lincoln, Secretary-Treasurer	1931

COUNCILORS

A. P. Overgaard, Omaha, Secretary	1930
H. J. Lehnhoff, Lincoln	1930
C. P. Fordyce, Falls City	1930
A. E. Cook, Randolph	1930
Morris Nielsen, Blair	1931
Frank Tornholm, Wahoo	1931
H. E. Potter, Fairbury	1931
W. J. Douglas, Atkinson	1931
R. D. Bryson, Callaway	1932
L. W. Rork, Hastings	1932
C. A. Selby, North Platte, Chairman	1932
A. L. Cooper, Scottsbluff	1932

DELEGATES TO THE A. M. A.

B. F. Bailey, Lincoln	1931
R. W. Fouts, Omaha	1930

ALTERNATES

C. P. Fordyce, Falls City	1931

DELEGATE TO COUNCIL ON MEDICAL EDUCATION OF THE A. M. A.

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ANNUAL MEETING, LINCOLN, MAY 13, 14, 15, 1930

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ELECTROCARDIOGRAPHIC INTERPRETATION*

JOHN C. THOMPSON, M. D.,
Lincoln, Nebr.

The subject of electrocardiology, while not a new one in medicine, has only in recent years been made a part of the usual medical curriculum. This change in the course of medical study has been produced by a recognition of the fact that a proper understanding of the deviations from normal in the electrocardiogram lends valuable aid to the diagnosis, prognosis, and treatment of cardiac disease. Many physicians lack this training, and consequently fail to avail themselves of its advantages.

The interpretation of a cardiogram is of greatest interest without doubt to the man who is engaged in the field of internal medicine. But it should also concern the surgeon, the obstetrician, or any other special field of medical endeavor where the question of cardiac strength may prove of vital importance.

In the past the metabolism test, blood chemistry findings, x-ray, and many other diagnostic procedures have gradually been taken from the field of specialized practice, and utilized to great advantage in general medicine. To do this highly technical knowledge is unnecessary. But, just as the average alert practitioner has familiarized himself to a degree with x-ray interpretation so should he also gain knowledge of the possibilities, and limitations of other diagnostic procedures.

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*Read before the Nebraska State Medical Association, Omaha, May 12, 1929.

In my opinion some fundamental knowledge of electrocardiology is required by the average physician of today in order that he may intelligently make use of this method of diagnostic procedure. With this idea in view I present the following diagrams, and cardiograms.

Any understanding of the subject must necessarily involve some knowledge of anatomy, physiology, and pathology of the parts concerned in producing, and conducting the impulse which results in a heart beat. In a schematic way Fig. 1 represents these structures.

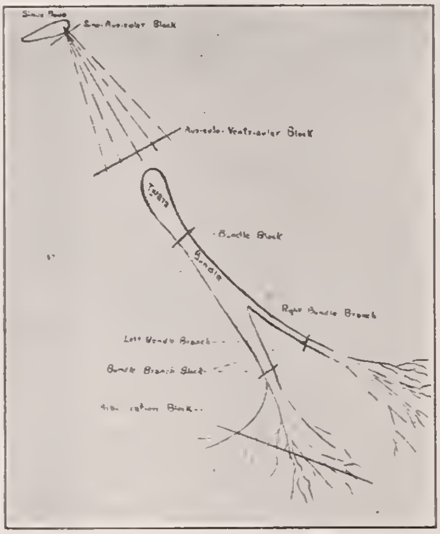


Fig. I.

Every normal impulse is generated in the sinus node, a structure which is spindle shaped, two cm. in length, and located at the junction of the superior vena cava and the right auricle. From the head of the sinus node the impulse spreads evenly over the auricles so that they contract almost synchronously. From the auricles the impulse spreads over a small muscular bridge to the ventricles.

The proximal end of the bridge or Twara's node is located on the posterior wall of the right auricle. From this point the bundle runs through the auricular septum, perforates the border, and passes into the septum of the ventricles. There it divides into two branches which pass along the right, and left side of the ventricular septum just under the endocardium giving out a fine system of fibrils which go to the muscular wall, chorda tendinae, etc.

The bundle is composed of small cells having elongated nuclei, and is surrounded by a mass of connective tissue which forms a special cover. Terminal fibers go over into the heart muscle in such fashion that a definite boundary cannot be made out.

From a physiologic standpoint this so called Specific Conduction System has a number of very remarkable qualities. These are:

1. A special capacity for impulse formation. This ability is more highly developed than in any other part of the heart.

2. A function of slow conduction while it is exceedingly rapid in the remainder of the heart.

3. A refractory ability during systole which prevents interference with a normal impulse starting in the sinus node.

From a pathologic viewpoint it is evident that disturbances of two distinct types may possibly develop. These are:

1. Delayed conduction, or block. From the diagram it is evident that this disturbance may arise at a number of different points. A block between the sinus node and auricles is called sino-auricular block, between auricles and ventricles, auriculo-ventricular block, in the branches, bundle branch block, and in the terminal fibrils, arborization block. These conditions may all be readily recognized in the cardiogram, and their prognostic significance properly evaluated.

2. It is also evident that at times the function of the sinus node in producing rythmical contractions of the heart may be disturbed, and that a new focus may start an abnormal rythm.

A normal phase of the heart beat is shown in diagram 2. It is composed of a number of waves produced by the changes in potential arising in the heart. The first wave is a curved line above an imaginary base line which is called a P wave.

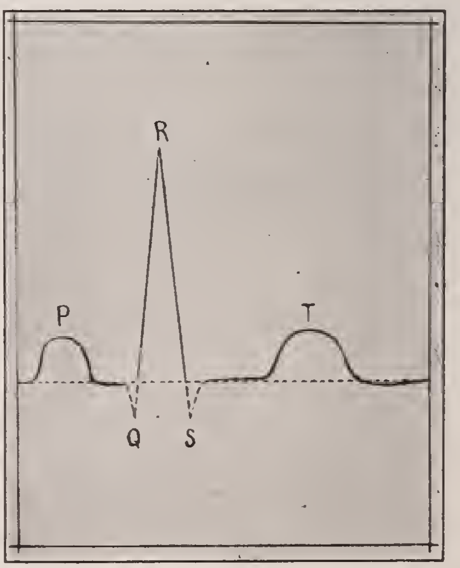
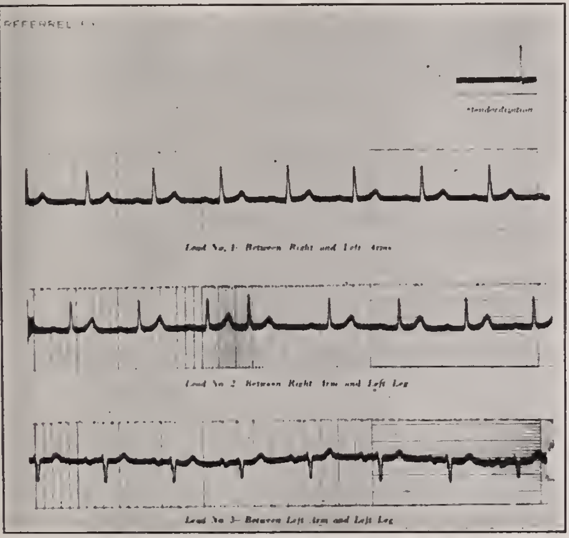


Fig. II.

The second falls below the base line, and is called a Q wave. The third, a tall angular curve, is above the base line, and is called the R wave. The fourth is a short curve below the base line, and is called an S wave. The last is a broad curve above the base line, and is called the T wave. The whole phase is divided into two parts corresponding to the systole of the heart's chambers. P and Q waves are produced by the beat of the auricles, and are called the auricular complex, while R, S and T are induced by the beat of the ventricles, and are called the ventricular complex.

The usual normal cardiogram contains a regular sequence of such phases occurring in all three leads. The direction of the waves, as just described, is the same in all leads.

In Fig. 3 it is to be noted that the rhythm with the single exception of a single phase in Lead 2 is absolutely regular.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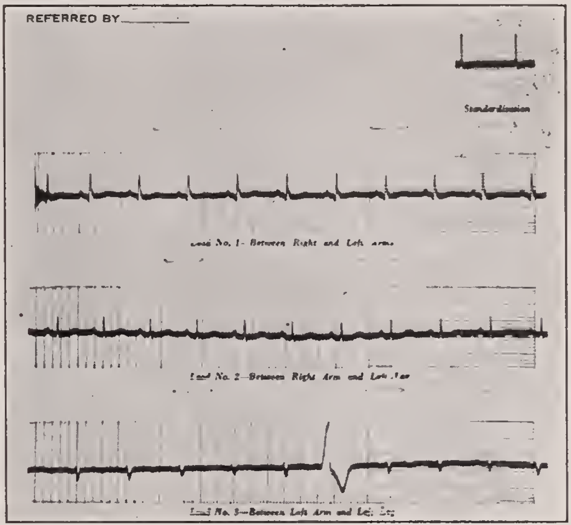
Standardization
Lead No. 1- Between Right and Left Arms
Lead No. 2 Between Right Arm and Left Leg
Lead No. 3- Between Left Arm and Left Leg

Fig. III.

In Lead 3, however, a definite change is present in the fact that the R wave or the initial ventricular deflection is directed downward, and the P wave is abnormal. The change in the initial deflection occurring in the absence of a similar disturbance in the R wave of Leads 1 and 2 is without any known pathological significance, and the cardiogram showing only such a disturbance is called a normal levo-cardiogram.

Changes occurring in the form or direction of either the P or T waves in Lead 3 are also without any known pathological significance, and are considered to be normal.

In Lead 2 a peculiar change in rythm is present, consisting of a premature beat. In analyzing this beat it is at once evident that a P wave is missing in the premature beat, a T wave has been dropped from the preceding complex, or the two have been combined to form one wave. The fact that the wave is larger than any other T wave in the same lead indicates that the P wave is buried in the T. Following this buried P the ventricular complex is normal so we safely conclude that the premature beat is an extra systole arising in the auricle.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Standardization
Lead No. 1- Between Right and Left Arms
Lead No. 2—Between Right Arm and Left Leg
Lead No. 3—Between Left Arm and Left Leg

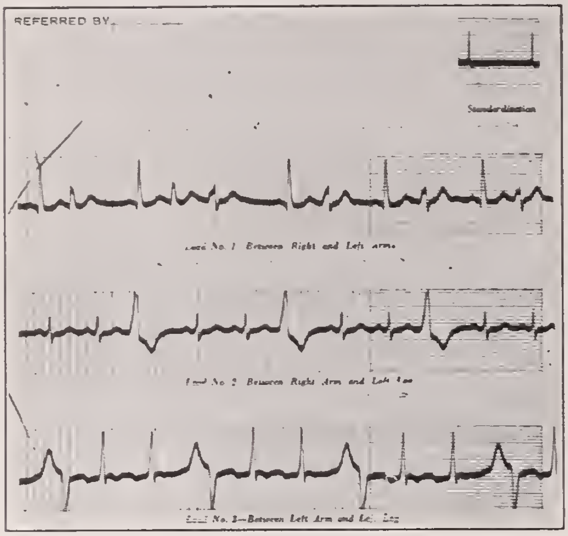
Fig. IV.

In Fig. 4 the cardiogram is similar to the one just discussed with the exception that the premature beat is present in Lead 3. In this instance a P Wave is absent, the initial ventricular deflection is directed upward, and is wider than normal, and the final deflection a T wave is larger than normal, and reversed in direction. These facts indicate that the beat takes its origin in the ventricles. The ventricle from which it arises may be determined from the direction of the initial deflection. In right ventricular extra systole which this happens to be the initial ventricular deflection is directed upward if it occurs in Leads 2 and 3, but downward if it appears in Lead 1.

The conditions just stated which determine the presence of right ventricular extra systole are exactly reversed when the extra systole arises in the left ventricle.

Fig. 5 is an example of extra systole occurring every 3d beat. This condition is called pulsus trigeminus. (Unfortunately the film was mounted incorrectly when the slide was made producing artifact in the 3rd lead).

From a clinical standpoint the extra systoles or premature beats have little significance per se. But at time a pulsus bigeminus is to be differentiated from the serious condition of a pulsus alternous. In such instances the electrocardiogram makes the differentiation absolute for the latter condition produces no electrocardiographic changes whereas pulsus bigeminus is evidenced by extra systole every second beat.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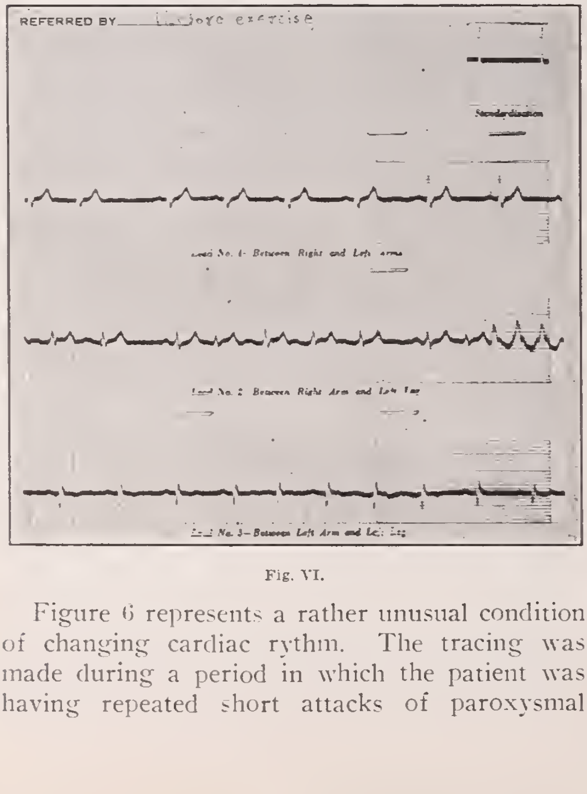
Standardization
Lead No. 1 Between Right and Left arms
Lead No. 2 Between Right Arm and Left Leg
Lead No. 3—Between Left Arm and Left Leg

Fig. V.

The study of extra-systoles is, however, of particular importance in that it provides a stepping stone to better understanding of other pathological changes.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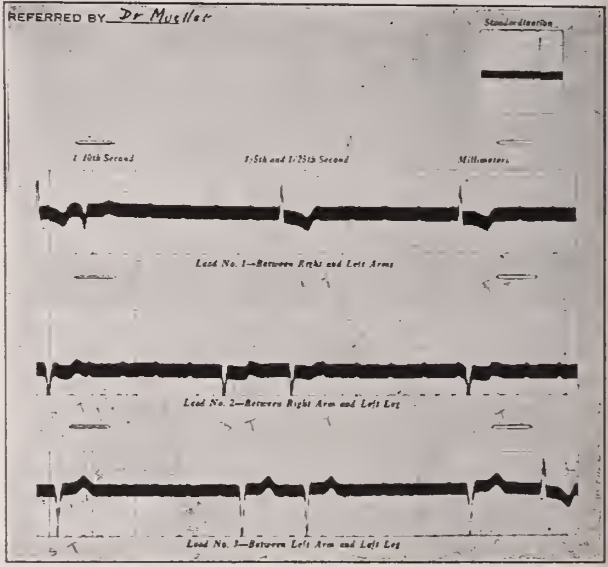
Standardization
Lead No. 1- Between Right and Left arms
Lead No. 2 Between Right Arm and Left Leg
Lead No. 3—Between Left Arm and Left Leg

Fig. VI.

Figure 6 represents a rather unusual condition of changing cardiac rythm. The tracing was made during a period in which the patient was having repeated short attacks of paroxysmal tachycardia. In Lead I a P wave is missing in the first two beats, yet the ventricular complex is normal. This would indicate that these beats arise in the main bundle. In Lead 2 a few of the last beats have a reversed ventricular complex. This would indicate an origin in this instance, from the right bundle branch. Such a tracing helps to indicate the location of the highly excitable foci from which the paroxysmal tachycardia takes its origin. In the future such localization may have some practical application but today it is only a matter of scientific importance.

By the way of comment it may be said that presence of paroxysmal tachycardia may or may not be a serious condition. The short attacks, such as were experienced by this patient, were undoubtedly not of serious character.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Standardization
1/10th Second
1/5th and 1/25th Second
Millimeters
Lead No. 1—Between Right and Left Arms
Lead No. 2—Between Right Arm and Left Leg
Lead No. 3—Between Left Arm and Left Leg

Fig. VII.

Figure 7 depicts a second type of tachycardia arising in the auricles called auricular flutter. The characteristic changes in the cardiogram which leads to this diagnosis is the presence of a series of small P waves occurring at regular intervals, and at a rate of one beat every 2-5 of a second or 150 per minute. Such a rate for auricular flutter is slow.

The cardiogram also illustrates a second very important condition, which is that of block. Most of the P waves are not followed by a ventricular complex. Furthermore, the ventricular complex when it does occur is unusual in that the direction of the initial and final deflections are reversed. It is further to be noted that the P waves and the ventricular complex have a changing time relationship. These facts indicate that a complete disassociation exists between the beat of the auricles, and the ventricles, a condition which is called auriculo-ventricular block.

The reversal of initial and final deflections in all leads is due to the fact that the function of stimulus formation has been assumed by a point below the auriculo-ventricular border. In complete block such a rythm is usually quite slow and regular. This tracing deviates from the usual in that the new ventricular rythm is not regular.

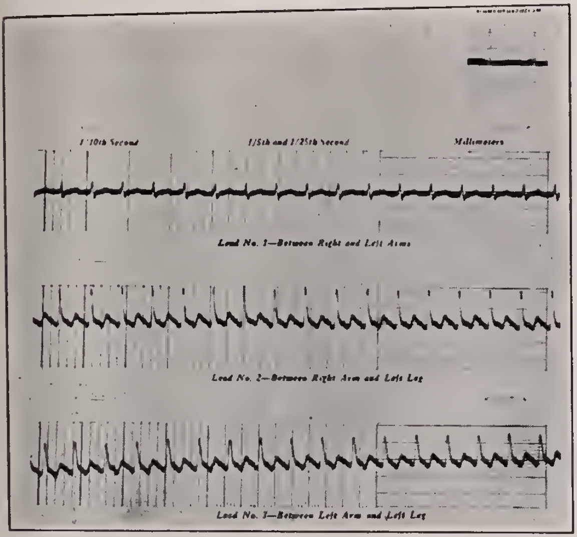
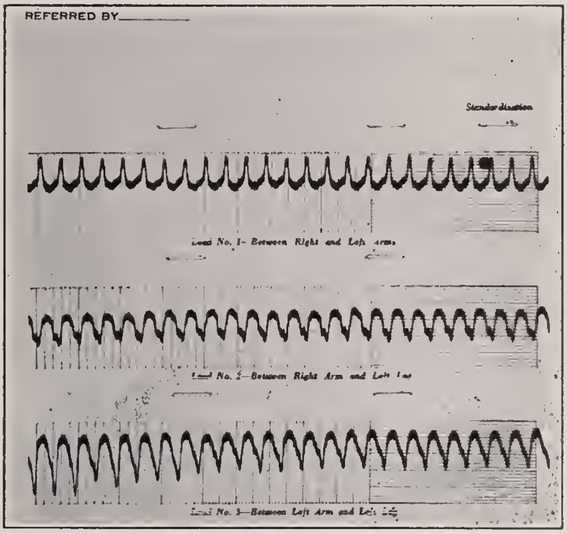

1/10th Second
1/5th and 1/25th Second
Millimeters
Lead No. 1—Between Right and Left Arms
Lead No. 2—Between Right Arm and Left Leg
Lead No. 3—Between Left Arm and Left Leg

Fig. VIII.

Figure 8 represents a second case of auricular flutter in which a difficulty not found in the preceding tracing is present. This consists in the identification of P waves. The ventricular rate in this tracing is approximately 166 beats per minute. This is a slow rate for a flutter without block, and the usual rate for the ordinary case of paroxysmal tachycardia.

The diagnosis, therefore, lies between a paroxysmal tachycardia with a fairly good prognosis, and an auricular flutter, a serious cardiac condition. In a careful examination of Lead 2 a very slight notching is found in both the descending limbs of the R, and the T waves. The time interval between these notches is evenly spaced so they are probably P waves occurring at a rate just double that of the ventricular rythm. The patient exhibiting this condition had a mitral stenosis with a very marked tonsil infection, and carious teeth. After rest in bed on full doses of digitalis the heart rate returned to normal, but later, on the operating table, a very definite auricular fibrillation developed. The transition from auricular flutter to fibrillation occurs frequently, and this fact helps bear out the contention that the small waves in the cardiogram are definite P waves. We may, therefore, conclude that the condition is an auricular flutter with a 2 to 1 partial auriculo-ventricular block.

It is of interest to mention at this time that while the auricular rate is more rapid in fibrillation than flutter the ventricular .rate is usually slower. For this reason fibrillation is much the more preferable condition to have present.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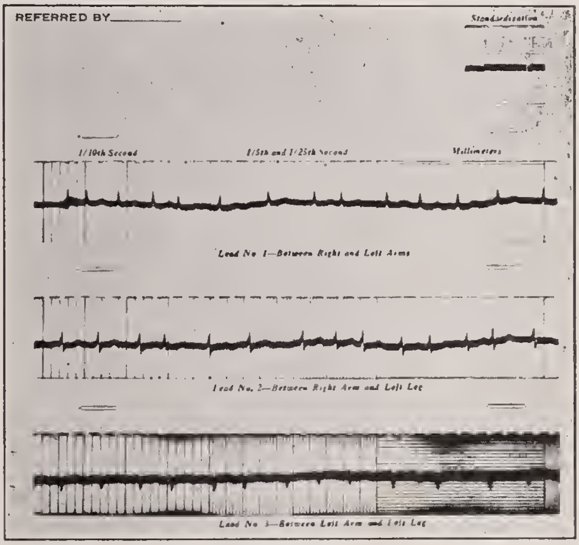
Standardization
Lead No. 1– Between Right and Left arms
Lead No. 2—Between Right Arm and Left Leg
Lead No. 3—Between Left Arm and Left Leg

Fig. IX.

Figure 9 represents a case of flutter in which still greater difficulty is noted in determining the location of P waves. The latter are, however, present in the form of a notch in the ascending limb of each R wave. The cardiogram, also, contains evidence of a right bundle branch block which will be referred to later.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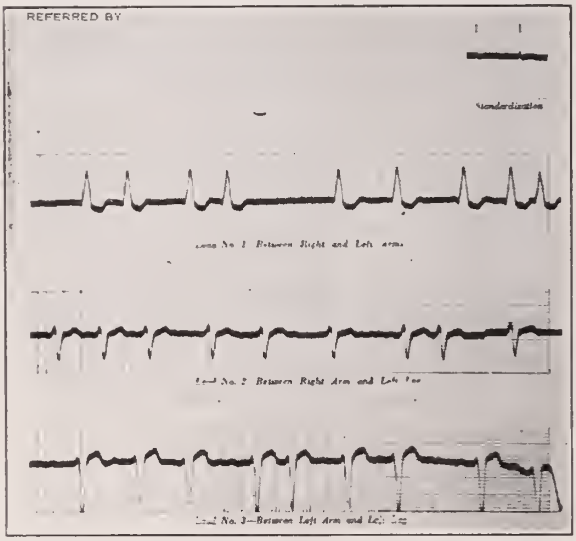
Standardization
1/10th Second
1/5th and 1/25th Second
Millimeters
Lead No. 1—Between Right and Left Arms
Lead No. 2—Between Right Arm and Left Leg
Lead No. 3—Between Left Arm and Left Leg

Fig. X.

Figure 10 is a cardiogram of a case of auricular fibrillation. The two essential points upon which the diagnosis is made is, 1st, the complete absence of P waves, and 2nd, the definite irregularity in the frequency of the ventricular phases.

The tracing also contains another interesting feature which has to do with the ventricular phases. The initial deflection is upright in Lead 1, diphasic in Lead 2, and inverted in Lead 3. T waves are upright in all leads. Such a change in the cardiogram indicates the presence of a left heart preponderance. Left preponderance occurs when the left ventricle is enlarged, and rotated.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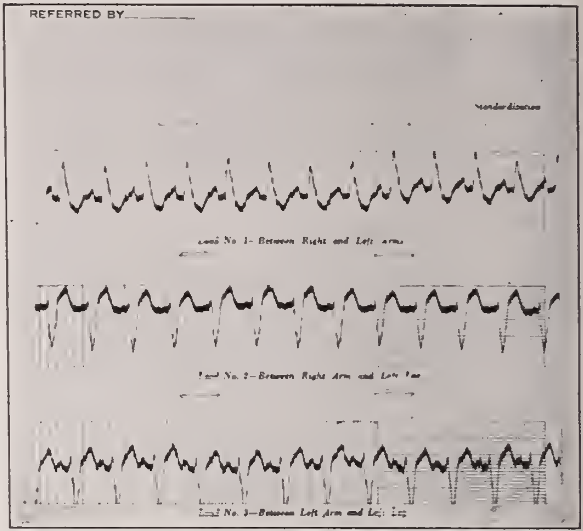
Standardization
Lead No. 1 Between Right and Left arms
Lead No. 2 Between Right Arm and Left Leg
Lead No. 3—Between Left Arm and Left Leg

Fig. XI.

Fig. 11 is another example of auricular fibrillation. It is to be observed that P waves are found at irregular intervals through the tracing. So we might well speak of the condition as a case of impure flutter, or a transitory phase between the conditions of auricular flutter and fibrillation. The tracing, also, contains a second abnormality which consists of a reversal in direction of the initial, and final phase of each, ventricular contraction due to a right bundle branch block. This will be discussed later.

Before leaving the subject of auricular fibrillation a few words as to prognosis are of interest. In such cases it is important to determine the cause of the fibrillation. When occurring in mitral stenosis, tricuspid insufficiency, of myocarditis it has a more serious significance than for example in Graves disease. In the latter condition following operation the irregularity may disappear. It is well to remember, however, that the operative risk is increased by its presence.

Fig. 12 represents a change in the ventricular complex due to a block in the right bundle branch. The characteristic changes to be noted in the tracing are first the direction of the R waves, upright in Lead 1, but inverted in Leads 2 and 3, second, the reverse direction of the T to the R wave in every Lead, third, the increase in time or breadth of the R waves, fourth, the splitting of the R wave, and fifth, the increased size of the T wave. These abnormalities arise from the fact that the impulse spreads through the branch which is intact to the ventricle which is blocked.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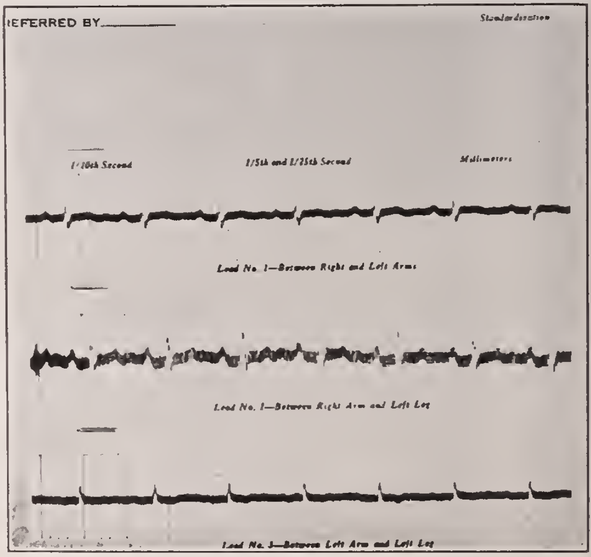
Standardization
Lead No. 1- Between Right and Left arms
Lead No. 2—Between Right Arm and Left Leg
Lead No. 3—Between Left Arm and Left Leg

Fig. XII.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Standardization
1/10th Second
1/5th and 1/25th Second
Millimeters
Lead No. 1—Between Right and Left Arms
Lead No. 1—Between Right Arm and Left Leg
Lead No. 3—Between Left Arm and Left Leg

Fig. XIII.

The conduction time in the ventricular phase is increased for the reason that the conduction pathway is lengthened. The impulse passing through only one branch produces a change in the ventricular phase which is similar to that of extra systole occurring in that ventricle.

The prognosis of this heart condition is not good but I have personally cared for one case in which two operations on the gall-bladder were successfully performed under local anaesthesia.

Figure 13 is a case of mitral stenosis with delayed conduction through the auricles. The auricular phase PQR or Pr interval as it is termed should not be more than 1-5 of a second. In this case it is 7-25 of a second, and, therefore, very definitely increased.

The patient from whom this tracing was made from the history had evidently suffered with this disturbance for a period of many years. Undue exertion in this case produced a feeling of syncope, and weakness.

Figure 14 represents a change in the P wave which is said to indicate auricular hypertrophy or preponderance. The wave is rather sharp, and broad, when compared to the T wave. A splitting or notching of the P wave is, however, more charactertistics of this condition. Lead 1 contains an auricular extra systole.

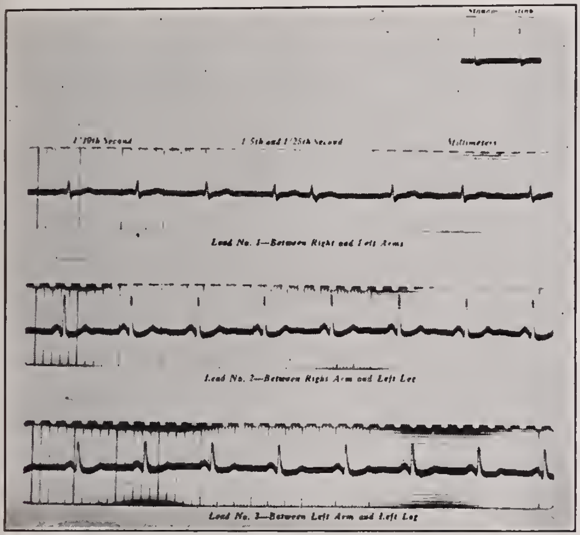

1/10th Second
1/5th and 1/25th Second
Millimeters
Lead No. 1—Between Right and Left Arms
Lead No. 2—Between Right Arm and Left Leg
Lead No. 3—Between Left Arm and Left Leg

Fig. XIV.

Fig. 15 contains only one abnormality, i. e., an inversion of the T wave in Lead 1.

Figure 16 is an example of the same disorder as in Figure 15. In this case, however, the inverted T is also present in the second lead.

The inversion of the T wave in Leads 1 or 2 has a very serious prognostic importance, when found in a patient who has not been on digitalis for several days prior to the electrocardiographic examination.

The average length of life with this inversion is variously stated from 12 to 18 months. It is, therefore, evident that when found it should contradict the employment of anything, but the most urgent surgery.

The examples of electrocardiographic changes discussed cover most of the field found in every day practice. A great many difficulties arising in their interpretation may be overcome by careful, step by step search for the various elements composing each normal heart phase. The average practitioner should recognize a normal cardiogram, and his knowledge should extend further to the point at least that he have a rather clear conception of what a diagnosis of fibrillation, block, etc., means, in the mechanics of the hearts action. Such information will help him to select the proper medical treatment, or to avoid undue risk in his surgical or obstetrical practice.

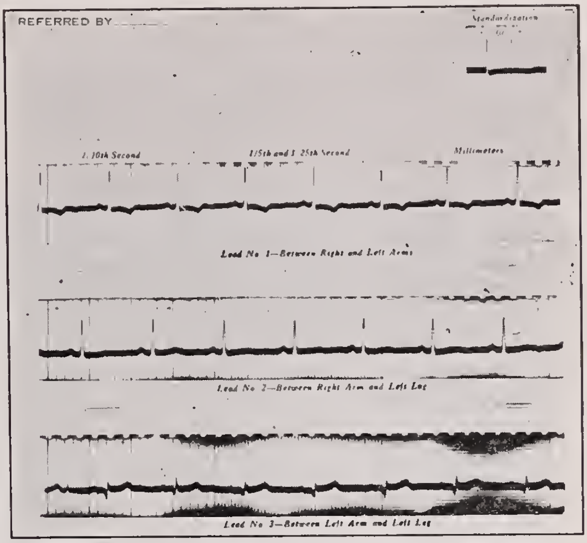
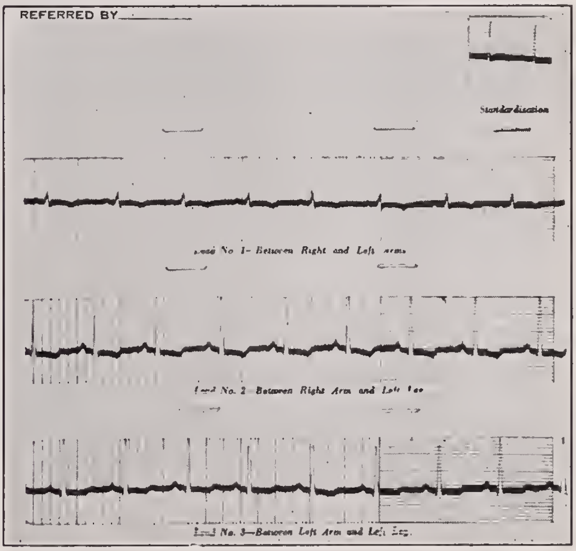

REFERRED BY
Standardization
1/10th Second
1/5th and 1/25th Second
Millimeters
Lead No. 1—Between Right and Left Arms
Lead No. 2—Between Right Arm and Left Leg
Lead No. 3—Between Left Arm and Left Leg

Fig. XV.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Lead No. 2 Between Right Arm and Left Leg
Lead No. 3—Between Left Arm and Left Leg

Fig. XVI.

CARDIOLOGICAL CASES*

A. D. DUNN, M. D.,

Omaha, Nebr.

I have three cases to present this morning. On account of the limited time allotted I shall use these cases merely as texts. The lessons they teach are well known to us, though frequently more "honored in the breach than in the observance."

CASE NO. 1

The first case is that of a young lady, single, nineteen years of age, who entered the Clarkson hospital, March 25, 1929, with an acute rheumatic fever. (Reads case history).

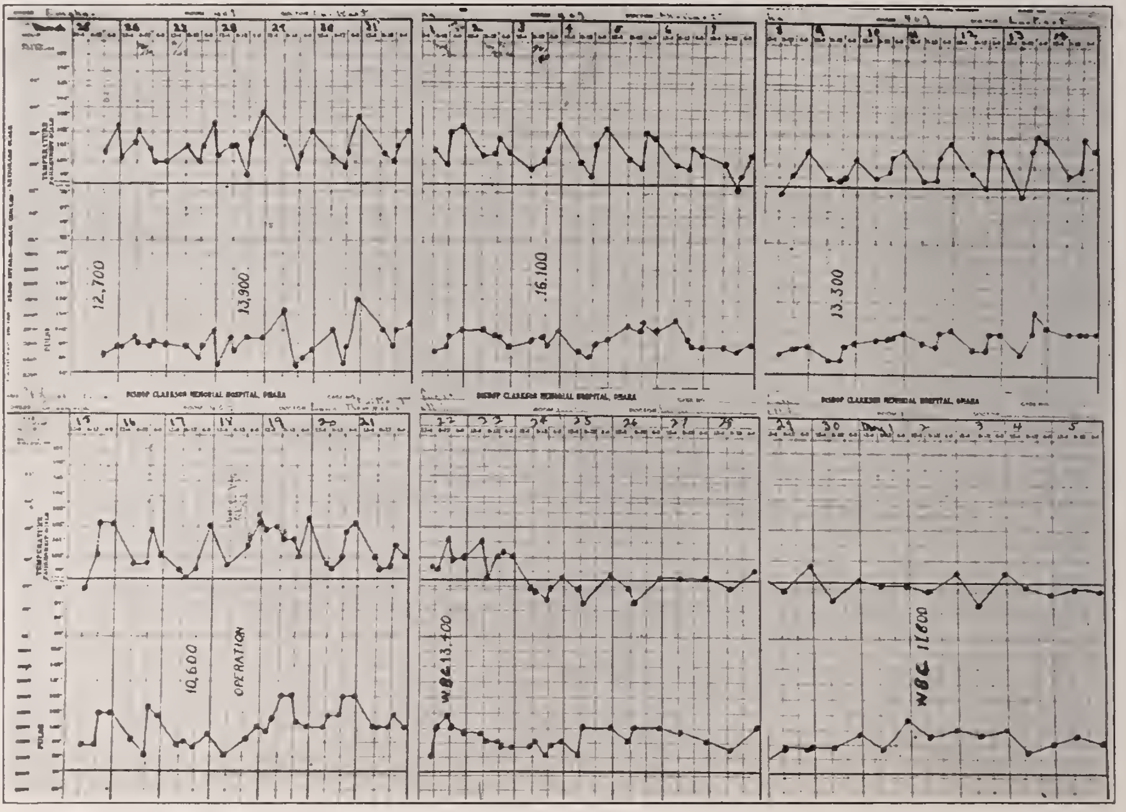

Figure I. Note the irregular febrile course and relatively high pulse rate which remained constant for three and one-half weeks. The temperature reached and held the base line one week after the maxillary sinus was drained. The leucocyte count went to 8400 three weeks after the last count shown on this chart.

This patient's story is told largely by the slide. She ran a febrile course for the first four weeks in the hospital. The peak reached 103 degrees. A nasal discharge had stopped, and with an increase in symptomatology, we decided to drain a cloudy left maxillary sinus, despite the precarious condition of the patient. In five days the temperature reaches and holds the base line, with general improvement in the condition of the patient. The leukocyte curve is in keeping with the general course of the disease. It held up until last Tuesday when it dropped to 8400. At the present time we have a young lady who seems reasonably well, with a perfectly compensated heart lesion following drainage of the maxillary sinus.

Now, as to the particular lesson of this case. From the history, findings and clinical course we were supposedly dealing with a recrudescence on a rheumatic basis of a chronic endocarditis at either the mitral or aortic valve, or both. The leukocyte count and fever were in keeping with that supposition. Because there was a cloudy maxillary sinus and a history of an onset with an acute upper respiratory infection, we decided to play the maxillary sinus as a focus of infection. The outcome has justified our course. A condition presumably offering a precarious prognosis became relatively benign. Serious reinfection of the endocardium had not occurred. Moral: A diagnosis of endocarditis without excluding paranasal sinusitis is hazardous.

There are relatively few needs for roentgenograms in cardiology. (Shows lantern slide of this patient's heart). They are useful for illustrative purposes. They record the shape and size of the heart more clearly than words or diagrams. They are important as records, and occasionally by giving detailed cardiac contour are valuable in the diagnosis of specific lesions, especially those of congenital origin. In my opinion routine roentgenograms in cardiac cases is uneconomic.

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*Abstract of a clinic given before the Nebraska State Medical Association, May, 1929.

The electrocardiograph has come into general use in cardiological practice. It is an instrument of the physiological laboratory which has been taken over by the clinic. It has an important but restricted field of usefulness. Electrocardiograph tracings are photographs of the excursions of a galvanometer string. It is a picture of the change in the electric current or potential occurring in the cardiac cycle. Heart action is coordinated by a timing apparatus and a conducting system. Trouble in this timing system brings about changes in electrocardiograph tracings, which enable us to detect otherwise undetectable heart muscle changes, and understand arrhythmias better. They help us to assess heart muscle damages more accurately. They are of value in treatment, helping us to measure the severity of muscle damage, and telling us in a way the amount of activity that should be permitted. Here we have essentially a normal electrocardiogram. Therefore, I think we can state the amount of damage this heart muscle has received at the hands of the infection is not great. The damage now evident in this heart is largely mechanical (valvular) and existed prior to the upper respiratory infection with its subsequent maxillary sinusitis.

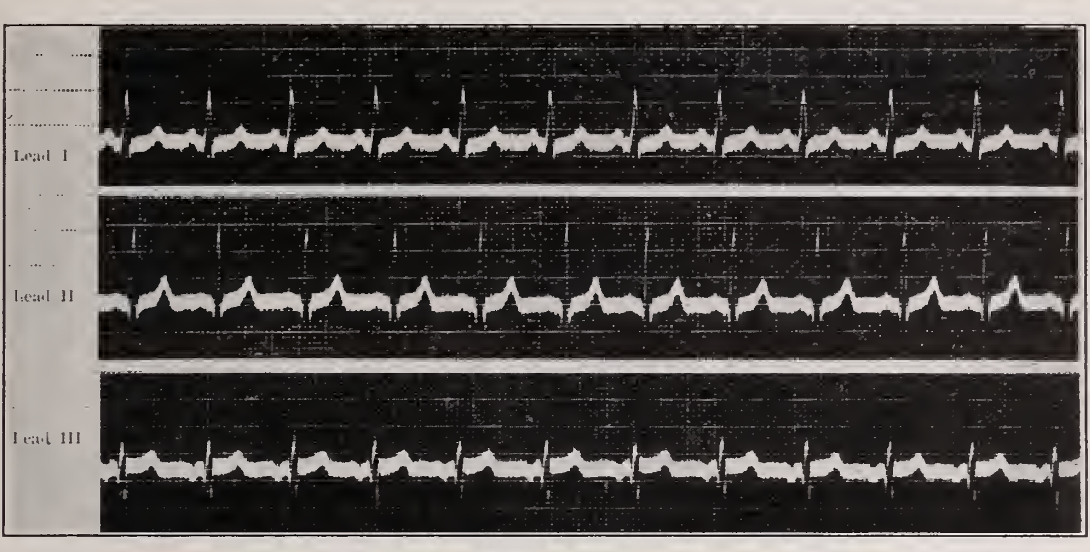

Figure II. Electrocardiogram showing some left ventricular preponderance. There are no marked EKG signs of heart muscle damage.

CASE NO. 2

(Reads case history of this patient).

The diagnosis is aneurysm of the aorta. The Wassermann test is positive. He will tell you his course had been progressively downward until September, 1928, when intensive anti-luetic treatment was instituted. The treatment has been fifteen small doses of neosalvarsan at five to ten day intervals. Mercury has also been given.

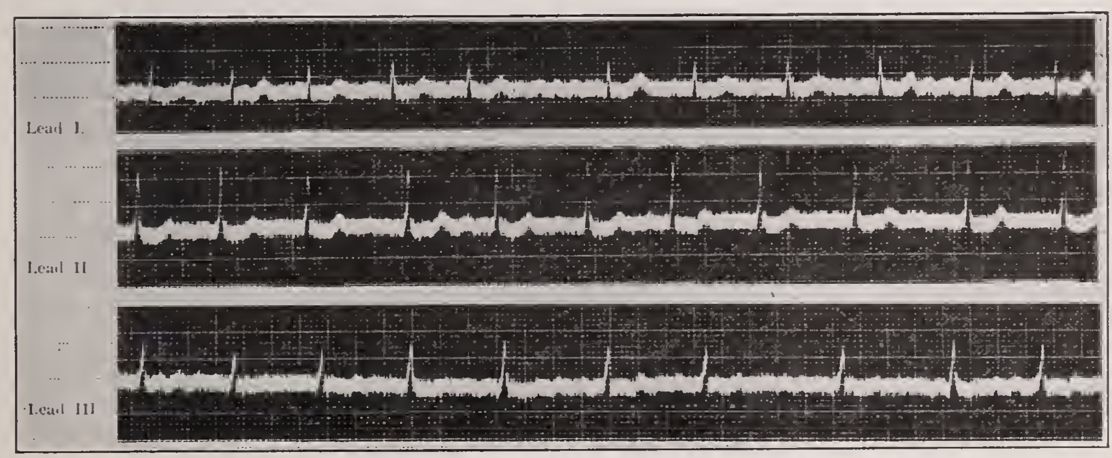

Figure III. Typical high degree of auricular fibrillation.

One does not attempt to cure such conditions, but to make life less intolerable. I think we do not appreciate sufficiently the symptomatic value of energetic treatment in cases of this kind. The amount of comfort obtained by this patient is commensurate with the financial outlay, even were he to be charged full rates.

CASE NO. 3

(Reads case history.) (Shows roentgenogram and electrocardiogram).

The cardiac contour is that of mitral stenosis. Electrocardiograms, taken five years ago and today, show about the same degree of auricular fibrillation.

The lesson to be learned from this lady is in the prolonged use of digitalis in auricular fibrillation. I think we are held too much by "rules for the administration of digitalis". There used to be such a rule to the effect that "if a patient is sick enough to require digitalis he is sick enough to be in bed". There are rules that say to give a certain dosage for four or five days, and then alternate with diuretin or caffein for four or five days. The patient's reaction to digitalis should determine the dosage and usage. In the first place, enough should be given. Next, a preparation should be used that is potent. I investigated the source of the digitalis in an instance of failure and found it had been taken from a drug room stock purchased three years prior. It was completely inert. Drops do not equal minims. It takes two drops of tincture of digitalis to equal one minim. We often find cases of heart failure being given 5 to 15 drops of tincture of digitalis t. i. d. in acute heart failure!

We have turned the digitalis bottle over to this lady for the past five years. She has taken it as she feels like it—usually twenty to forty drops, and sometimes as high as sixty drops several times a day. She knows her problem and handles it. I have a patient with mitral stenosis who has managed her digitalis dosage for twelve years. She knows better than I when she needs digitalis and how much to take. The physician's job was to teach her how to use it.

GENERAL SURGERY UNDER SPINAL ANESTHESIA—PERSONAL EXPERIENCES

JOHN E. SUMMERS, M. D.,
Omaha, Nebraska.

Up until about one year and a half ago there was a general apprehension that spinal anesthesia was too dangerous a method to be employed in any except a restricted way and then by the very few who had given special study to its details and the medicaments employed. I had shared in this feeling and only very rarely had used spinal anesthesia. However, I was fortunate to witness an operation by Dr. Donald Macrae of Council Bluffs upon an aged man from whom, under spinal anesthesia—Pitkin Method—he removed a cancerous ascending colon. There was apparently no shock or evidence that a serious operation was being or had been done, a condition such as I had never witnessed or experienced in my own work when somewhat similar operations were done under general anesthesia.

I determined to learn how to employ spinal anesthesia by familiarizing myself with the more recent reports of the work of others. About one year ago Dr. J. W. Duncan, Omaha, read an interesting paper on spinal anesthesia before the Douglas County Medical Society. Skepticism was expressed then and later by "doubting Thomases" as to the safety of the procedure. All of these men, I believe, have since become converts, after having the reasons for earlier mistakes, personal or hearsay, pointed out to them.

I believe I was the first surgeon here to do general surgery under spinal anesthesia, i.e., any operation from the crown of the head to the soles of the feet. I have no original knowledge to impart; my work has been simply carrying out what those of wider opportunities and study have taught and I have endeavored to teach several young men what I have learned and have given them opportunities to advance their own knowledge by practical clinical experience. One of these young men, Dr. M. E. Lathrop, became so expert that his services were in frequent demand by operators in several of the city's hospitals; these men are now doing their own spinal anesthesia.

Dr. Lathrop and myself, in the Douglas County hospital and elsewhere, have employed spinal anesthesia in which operations were done for goitre, amputation of the breast, operations upon the gallbladder, stomach, intestines, herniae, appendices; all kinds of pelvic surgery, including ruptured ectopic pregnancy, hysterectomies, ovarian tumors, tubal and ovarian abscesses, suprapubic prostatectomies, rectal, vaginal and perineal work. On the lower extremities, open reduction of fractures and amputations. I have demonstrated frequently the complete anesthesia of the scalp and of the face and neck when I have wanted to produce high anesthesia, and this leads me to the important point: how to employ spinal anesthesia so as to in a relative degree anesthetize the area expected to be involved in a proposed operation. I have found that this can be done and at the same time govern with fair accuracy the blood pressure so that there is eliminated the danger of too sudden and great a depression due to splachnic paralysis.

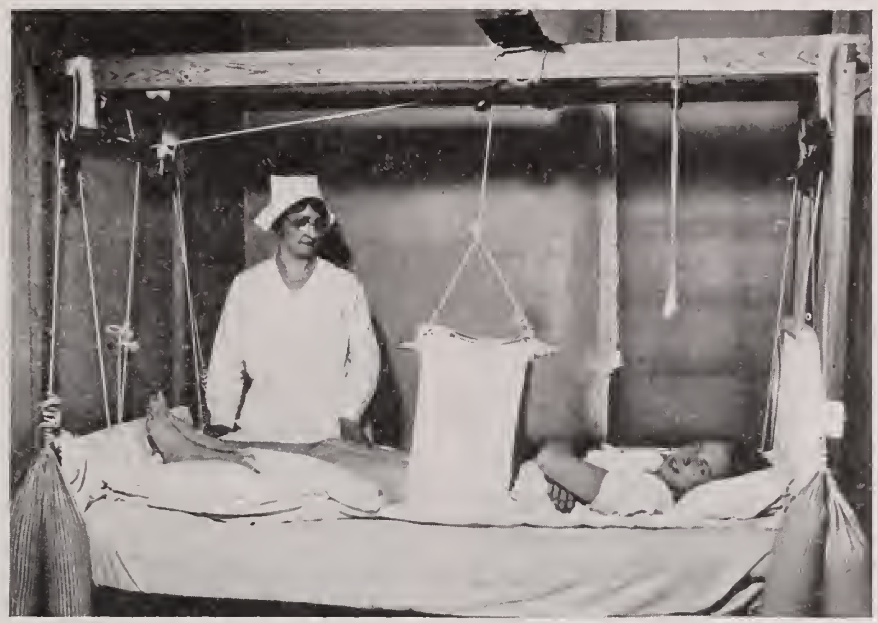

Figure 1A. Fracture of Pelvis. Pelvis suspended to coapt fragments. (Jopson Method).

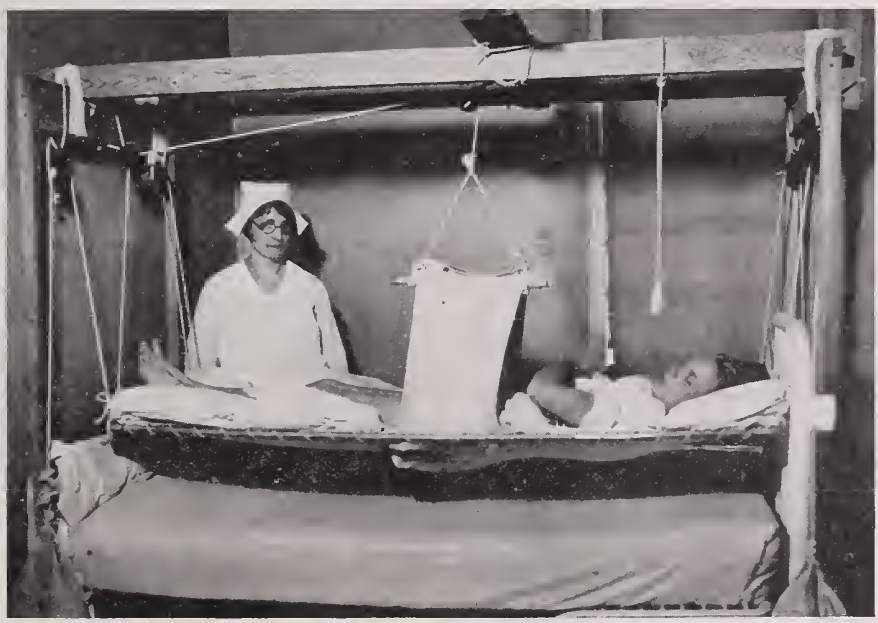

Figure 1B. Fracture of Pelvis. Patient suspended. Showing advantages of Bradford frame.

The principles we use are what we have evolved from—first, the work of Pitkin, then, Koster and Lebat, and our own experience. None of this work can be comfortably done, i. e., the operator feel at ease, without the employment, or availability, of ephedrine and the intelligent employment of a blood pressure apparatus.

The anesthetist must know how to do a spinal puncture, he must use a needle of preferably 22 gauge with a 45 degree (or the Pitkin) bevel point.

I have as yet never used sodium barbital as

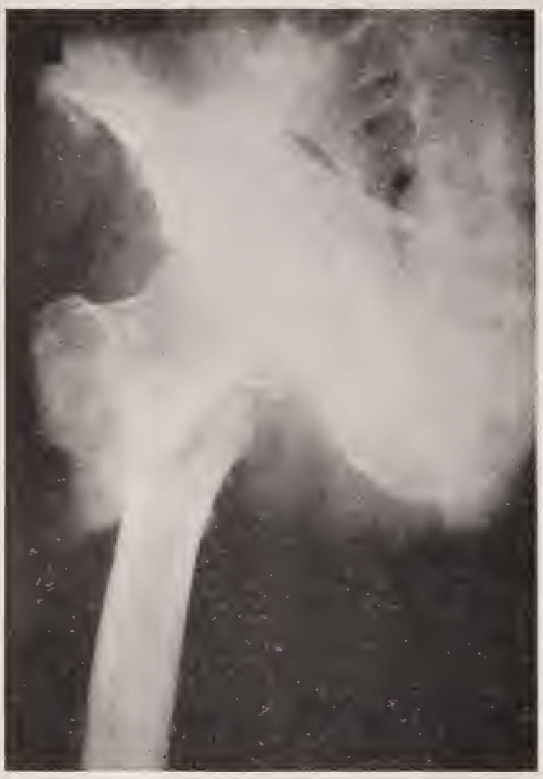

Figure 2A High fracture of femur irreducible by manipulation and traction.

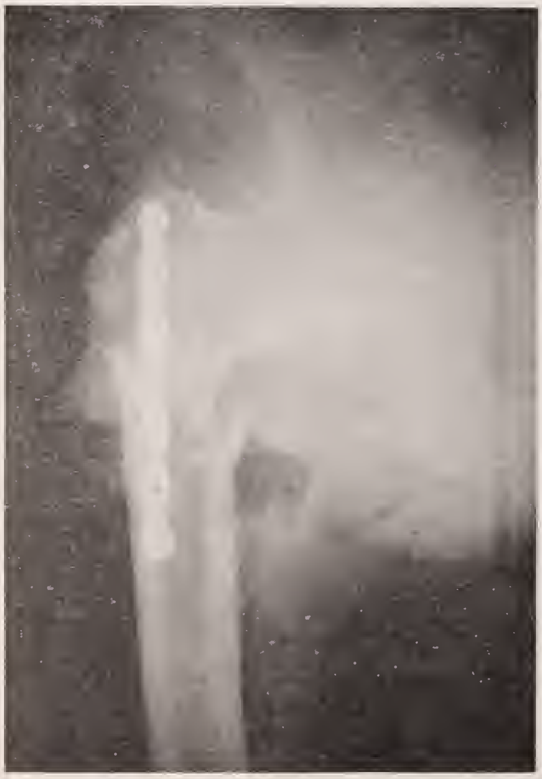

Figure 2B. Open reduction; only fair approximation possible. Solid union.

a preliminary medication—it is highly recommended as a sedative given 1½ hours prior to the spinal puncture. I use morphin grains 1/4, scopolomine grains 1/100, given to a robust subject, one hour before operation; in elderly people or those in a run down, debilitated condition I give a relatively smaller dose of these drugs.

It is rather interesting to note some of the differences as to the amount of novocaine given and the amount of spinal fluid withdrawn as a solvent. At Rochester, Minnesota, the volume of novocaine-spinal fluid solution averages more than twice the size of that of the Jackson Clinic at Madison, Wisconsin, but the dosage of novocaine in mgms. in in general smaller.

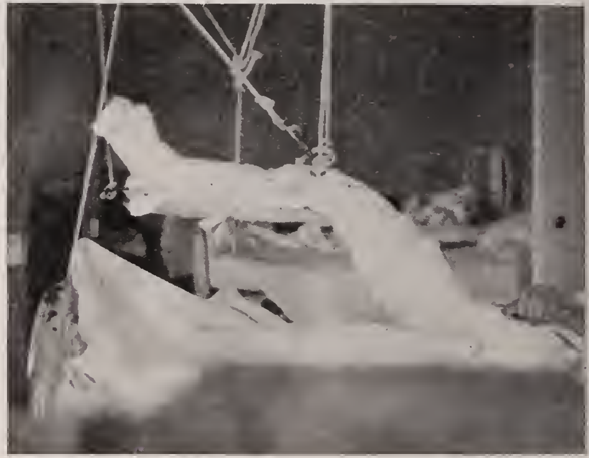

Figure 3. Ice Tongs traction for compound fracture of femur. Tibia fractured also.

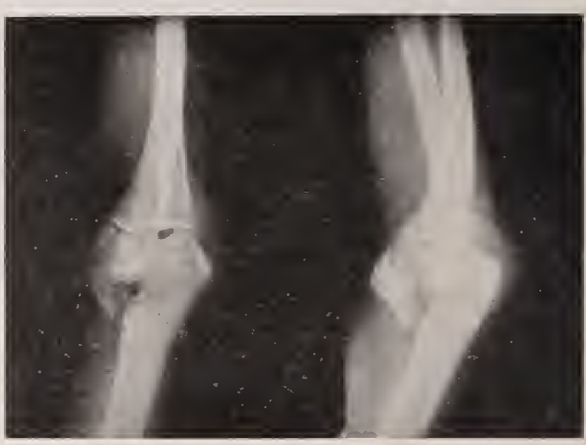

Figure 4A. Fractured elbow; removal of internal condyle.

My practice is to give in the average subject 100-150 mgms. of novocaine in 4 cc of spinal fluid, puncture made in the second lumbar interspace, for operations below the umbilicus, injected slowly — about 15 seconds. Operations of the pelvis, rectum, etc., require a relatively large dose of novocaine, 100-200 mgms., dissolved in a small volume of spinal fluid, about 1 cc—1½ cc, the puncture made in the fourth lumbar interspace. The same rule applies for operations upon the lower extremities. For high operations—stomach, gall bladder, goitre, breast, etc., I have used very satisfactorily 200-250-300 mgms. novocaine in 8 cc of spinal fluid, puncture made in the second lumbar interspace, the amount of novocaine being the larger the higher the location of the operation and the larger and more robust the patient. It is given in about twenty seconds. All injections are made with the patient in slightly tilted Trendelenberg position—ten degrees. Ephedrine, grains ¾, given five to ten minutes before the novocaine injection will hold the average blood pressure within reasonably safe limits of the normal. In hypotension in an operable patient by any form of anesthesia, ephedrine will prevent a dangerous fall of blood pressure.

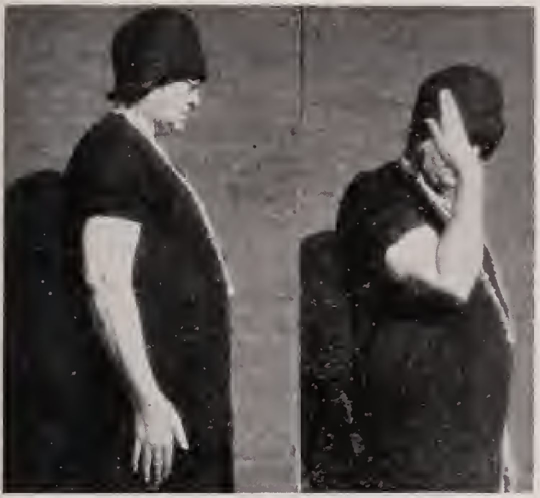

Figure 4B. Result of operation upon fractured elbow.

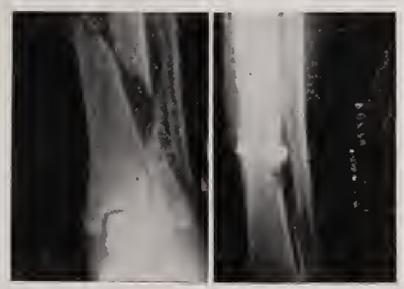

Figure 5. Multiple compound fracture of tibia and fibula. Repair by Parham band.

In hypertension ephedrine should be given guardedly, the blood pressure being watched carefully; a preliminary dose may be omitted. The Trendelenberg position in lowered blood pressure is the one of safety. Adrenalin and ephedrine should always be at hand for intelligent hypodermic administration. Vomiting may be controlled by the hypodermic use of three or four minims of adrenalin. In an instance of this kind when doing an abdominal hysterectomy under spinal anesthesia in a hospital away from home, the bowels were pumped out upon the abdomen in spite of my best efforts to prevent. Medication by ephedrin and adrenalin failed and ether had to be given.

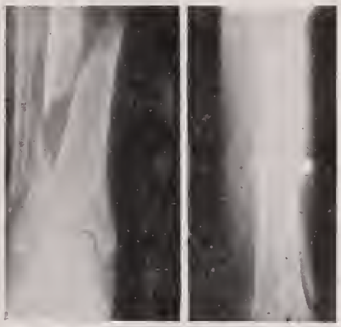

Figure 6. Multiple compound fracture of tibia and fibula; repair by Parham band.

In order that you may know something more of the work done at the County Hospital, Dr. R. L. Schroeder has prepared for me a list of our fracture experience during the past three years. There were 27 fractures of the hip; fourteen of them were of the neck of the femur. More than 100 other fractures including those of the skull, spine, ribs, pelvis, upper and lower extremities, fracture dislocations of the shoulder and ankle, shoulder dislocations, hip dislocations, 2 each, and one elbow dislocation. Some of my operative work for fractures is shown in the illustrations. All but the elbow case were done under spinal anesthesia. Ordinary simple fracture reductions are now done under local anesthesia, either conduction or injection between and around the fragments. Dr. Schroeder has prepared a very comprehensive paper on hip fractures based upon the material of the Douglas County Hospital which will be published.

The work of the Douglas County Hospital, I think particularly the medical, is becoming so well known through the people who have had its advantages that there is a constant demand for admittance.

Enquirer (to Nerve Specialist): "And is your nerve treatment completely successful?"

Nerve Specialist: "Quite. So much so that only the other day one of my patients tried to borrow $50.00 from me."—Humorist, London.

CASE STUDIES IN GOITRE, NO. III*

ALFRED BROWN, M. D.,
Omaha, Nebr.

SUBSTERNAL GOITRE

Substernal goitre is the third variety of enlargement of the thyroid gland which usually falls into the class of non-toxic goitre. It begins as a collection of enlargements, usually adenomatous in type, which form in the posterior portions of the lateral lobes and consequently as they grow push backward and downward giving a projection of the goitre through the superior aperture of the thorax which later either encroaches upon the lung on either side, or if the growth is not strictly bilateral, presses on one side more than on the other causing a distortion or compression of the trachea. As in the cystic goitre the adenomatous masses very frequently undergo rather rapid degeneration resulting in a mass of disintegrated adenomatous tissue with sometimes connective tissue formation, sometimes calcareous degeneration and sometimes liquefaction giving rise to larger or smaller cysts.

Clinically substernal goitre is met with in the middle years of life. Beginning as it does with small adenomatous masses it naturally takes considerable time for these masses to enlarge sufficiently to encroach upon the thorax. The symptoms when they do come on are almost entirely those of pressure. In the order of frequency this pressure is exerted first upon the trachea giving rise to dyspnoea, second upon the oesophagus giving rise to difficulty in swallowing and third upon the recurrent laryngeal nerve giving rise to a hoarseness of the voice which is due to partial or complete paralysis of one or the other vocal cord.

The dyspnoea which occurs in these cases is quite characteristic and in cases in which the goitre does not appear to a great extent above the superior aperture of the thorax there is a possibility of making a mistake in diagnosis and considering the case as one of bronchial asthma. The reason for this is that when the patient is in the upright position there is little if any dyspnoea but as soon as the patient lies down the great lobes of the thyroid in the upper portion of the chest press backward upon the trachea giving rise to a diminution in its lumen and a difficulty of respiration. There is also a rather peculiar stridor in some cases simulating the stridor of subglottic edema. The lobes of the thyroid also press upon the great veins in the upper thorax causing a congestion of the veins of the neck which enlarges the thyroid and so increases the pressure. Epistaxis also occurs as the result of this congestion. There may also be pressure upon the recurrent laryngeal nerve causing a reflex cough which simulates the cough of bronchial asthma. If, however, in these cases it be remembered that the typical sputum of bronchial asthma is not present the mistake in diagnosis may be avoided, especially as upon resumption of the upright position the symptoms of dyspnoea usually disappear.

The diagnosis is suggested by the dyspnoea and the presence of enlargement of the thyroid in the neck. This enlargement is quite characteristic in cases of substernal goitre. It begins low in the neck and differing from that of the colloid and cystic types it is extremely difficult to see the lower margin of the thyroid. It appears to pass downward without any marked change behind the sternum and sterno-clavicular articulation and in lateral view the re-entrant angle between the lower margin of the thyroid tumor and the sternum is not apparent. This is shown in Fig. 1. Unfortunately no photograph of the patient whose history is given was obtained and a photograph of a similar typical case is substituted. The diagnosis cannot be confirmed by any of the signs of toxic goitre because these are as a rule not present. But it can be confirmed

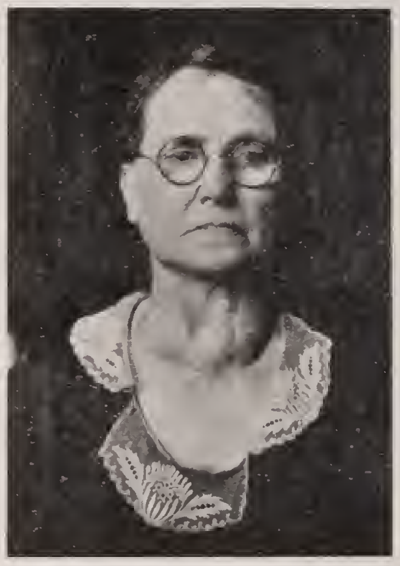
Fig. 1. Mrs. W. Substernal goitre. Note the low situation of the mass in the neck and the manner in which its lower margin appears to lose itself behind the upper aperture of the chest and absence of any marked line of demarkation between the upper margin of the chest and the lower margin of the tumor.

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*From the Department of Surgery, University of Nebraska, College of Medicine.

by two definite signs. First, the presence of an area of dullness on either side of the sternum in the first and second interspaces and the confirmation of this area of thickening of the superior mediastinum by means of x-ray. Confirmatory signs of disease of the heart or the lungs and confirmatory signs of the emphysema accompanying bronchial asthma are, of course, lacking.

The best treatment of these cases is by subtotal thyroidectomy removing the greater part of the gland. This is indicated first, to relieve the pressure upon the trachea, oesophagus and great vessels of the neck; and second to avoid the possibility of complications such as hemorrhage in the cyst present in the gland giving rise to dyspnoea with possible immediate death or erosion of the tracheal cartilages giving rise to collapse of the trachea with immediate respiratory distress in which a tracheotomy in an attempt to save life would be extremely difficult.

Case No. 24426. Mrs. Mary S., a colored woman, aged 46 years, entered the University hospital on January 8, 1928, on the medical service of Drs. Bridges and Pratt. Her chief complaints were: First, enlargement of the neck; second, dyspnoea and respiratory obstruction; third, palpitation, precordial distress and tachycardia; fourth, weakness; fifth, a nonproductive cough; sixth, a skin eruption on the left arm.

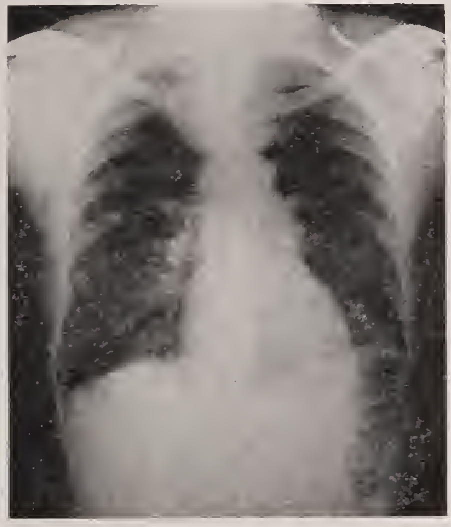

Fig. 2. Case No. 24426. X-Ray of chest. Note the clouding of the upper mediastinum. The displacement of the trachea is shown faintly.

Onset and development: Childhood diseases, whooping cough, measles with no complications. Has been very well except for the usual sore-throat and common colds until approximately two years ago. In September, 1925, noted a skin eruption of small red papules having a glazed appearance with marked itching starting on the fingers of the left hand. Never noticed vesicles or pus. This has gradually spread in linear character to the medial, lateral and dorsal aspects of the arm. Has been under treatment almost two years with no improvement.

In November, 1925, started coughing, often in paroxysms with severe neck pains and epistaxis. At this time noted an enlargement of the neck. This has gradually increased in size with persistence of the cough which has been worse during the fall and winter. Also associated were periods of palpitation, tachycardia and dyspnoea. The remainder of the history is negative except for the fact that since the onset of the cough about two years ago she has lost approximately twenty-two pounds in weight.

Physical examination: Shows a well nourished colored woman of about the stated age sitting in a chair in the ward. The eyes react to light and accommodation. The pupils are regular and equal. There is no exophthalmos and no lagophthalmos. The throat shows moderately large and ragged tonsils. There is no pus expressed. The anterior and posterior pillars are injected. There is no post-pharyngeal discharge. The veins of the neck are greatly distended. The lymph glands are not palpable. The thyroid shows a diffuse bilateral enlargement, more on the left side with slight irregularity of contour and elastic consistency. No bruit or thrills are heard. The mass seems to extend below the sternum. The area by percussion is impaired about 10 cm. to the right and 14 cm. to the left of the midline. The veins of the neck are most prominent on the right side. In the thorax the expansion is equal on both sides. The thorax is of asthenic type. Vocal and tactile fremitus and resonance are equal on both sides. There are no rales. The breathing is broncho-vesicular. The heart apex beat is not seen or felt. There are no thrills or murmurs. The rate is 86 per minute, and is regular. The blood pressure is 96/68.

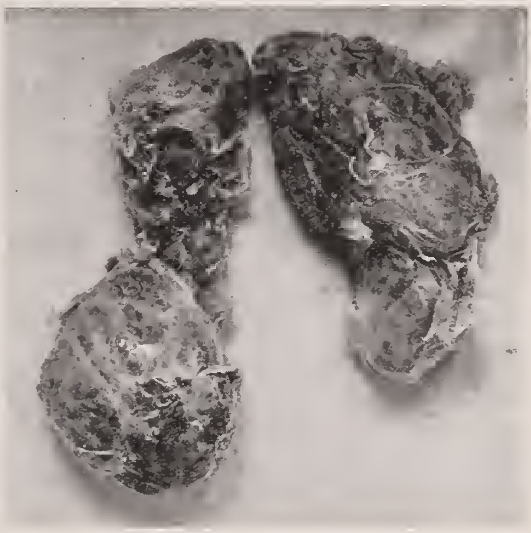

Fig. 3. Case No. 24426. Substernal goitre removed at operation. Note the constriction between the upper and lower masses on either side which marks the level of the upper margin of the sternum and sterno-clavicular articulation.

The remainder of the physical examination is negative except for the presence of a skin eruption on the left hand, arm and shoulder which has no relation to the thyroid condition.

The laboratory examination showed urine of a specific gravity of 1.020, acid reaction; no albumen, no sugar, no diacetic acid and with a negative microscopical examination. On January 9, Wassermann reaction was negative. On January 10 the red blood cells were 3,550,000. Hemoglobin 60%, leucocytes 10,600 with 62% polymorphonuclear leucocytes and 38% of lymphocytes. On the same date, January 10, 1928, the basal metabolic rate was plus 0.5%.

Because of the brassy cough and the somewhat marked stridor an examination of the larynx was made by Dr. J. C. Davis and he reported that there was no paralysis of the vocal cords. "The entire pharynx seems to be pushed upward and posteriorly."

X-ray taken on January 12, 1928 is reported as follows: "Stereoscopic studies of the thorax demonstrate a fairly symmetrical thoracic cage. Right dome of the diaphragm is quite wavy with slight obscuration of the costophrenic angle. Left dome of the diaphragm is more or less flattened with displacement upward by gas in the splenic flexure. Cardiac shadow more of the bulbous type with some flattening of the left auricular curve. Hilum shadows on the right side slightly increased with accentuation of the broncho-vascular tree within whose ramifications are multiple areas of calcium density which would suggest old glandular involvement. There is some slight beading of the broncho-vascular tree in the mid zones. On the left side there is some prominence just above the auricular curve suggesting possibly some increase in the caliber of the pulmonary artery. Considerable interest of the examination should be centered about the upper mediastinum which demonstrates a definite increase in density, more or less homogeneous in character, of a funnel shape protrusion down from the neck shadow which we would be inclined to interpret as that of a substernal thyroid. There has further been some calcification in the cervical nodes, above the left clavicle."

(Signed) Carleton B. Pierce, M. D.

Surgical consultation was requested by Dr. Pratt on January 13, 1928, and the report was:

"Substernal non-toxic goitre with moderate pressure symptoms. Suggest thyroidectomy."

(Signed) Alfred Brown, M. D.

I performed a subtotal thyroidectomy January 16, 1928 under paravertebral anaesthesia. The patient was very cooperative. A collar incision was made with a transverse division of the pretracheal muscles and division of the capsule. The upper poles were ligated. A large cystic substernal mass on the right side and an adenomatous bilobated mass on the left side were removed without much tug on the trachea or alteration of speech. The wound was closed in the usual manner and a small rubber tissue drain inserted in either angle of the wound through the sternomastoid muscle into the fossae remaining after the removal of the thyroid.

The pathological report was as follows:

"Gross description: The specimen consists of both lobes of the thyroid gland. The left lobe weighs 120 grams and measures 11x5x4 cm. The right lobe weighed 90 grams, measured 12x5x4 cm. Measurements and weights are taken after fixation. Both lobes have a constriction in about the center of the gland. The left lobe has the major mass above the constriction and the right lobe with the major portion of the mass below. This being partially cystic. The gland is nodular and several small colloidal cysts are evident on the external surface. The large cyst in the lower portion of the right gland is estimated to be approximately 4 cm. in diameter. The constriction seen was caused by the pressure of the sternum, the two lower masses being substernal.

Microscopic description: There are nine sections taken from five different blocks of the tissue. They are essentially of the same structure. It consists of irregular acini, a part of which are filled with colloid The colloid varies in its staining reaction, some of it being light colored, vacuolated, and in a few instances infiltrated with leucocytes. A few of the colloid masses appear as a very fine network evidently the result of coagulation of colloid that is much more liquid than normal. One mass of colloid is deformed by cholesterin slits and appears to have escaped into the stroma. The epithelium is large, cuboidal for the most part. There are a number of tall epithelial cells charactertisic of hyperplastic goitre but few small portions of epthelium are seen which tend to be columnar. There are quite large groups of acini which have little or no colloid in them and here the arrangement of the epithelium is that of fetal adenoma. In fact, most of the epithelial cells are of that type. The stroma contains some old hemorrhage, some escaped colloid material, and a very few lymphocytes. In portions of the tissue there are large masses of dense hyalinized stroma without acini. In other portions the stroma is very delicate, the fibrils are widely separated apparently by fluid and the tissues are degenerated. The cysts seen grossly are evidently the result of retrogressive tissue changes. The picture is quite definitely that of fetal adenoma, however, there is more colloid material than is usually seen in that type of gland, and acini are better formed than in many of the specimens of this group.

Diagnosis: Adenoma of the thyroid, fetal type, with degeneration and necrosis.

(Signed) A. J. Miller, M. D.

The post-operative convalescence was uneventful except that on January 20 she had a violent headache and complained of photophobia and some double vision which she then stated she had had occasionally previous to the operation. She was referred to the eye department for examination. The result stated that, "the right eye and left eye both have a vision of 20/20 with the glasses she has been wearing and a vision of 20/20 without any glasses. There is, however, a diplopia at 8 inches. Reaction to light is sluggish. The right pupil is smaller than the left. There is no pathology in the fundi."

(Signed) C. S. James, M. D.

The pupils, before operation, were equal and reacted to light and accommodation. It is to be noted that in some cases after thyroidectomy an inequality of the pupils occurs. It is due to the trauma upon the sympathetic nervous system during the manipulation incident to the removal of the gland which causes an interference with the cilio-spinal reflex. It is purely temporary in character and the inequality of the pupils disappears in the course of a few weeks or months and does not reappear unless at some subsequent time the patient receives a mydriatic for examination of the eyes when, as the pupils dilate, the inequality will reappear, to disappear again as the influence of the drug wears off.

The patient was discharged from the hospital in good condition on January 28, 1928. On February 21, 1928 a note was received from her physician directed to the follow-up department which reads as follows:

"Incision has healed by first intention. Patient states that she has never felt better in the past twenty years than she does at present. Choking sensation has disappeared as have the rest of her symptoms. I thank you for your kind cooperation."

(Signed) W. W. Carveth, M. D.

A doctor says there is no special virtue in early rising. Almost anybody would have faith in a doctor like that.—Punch.

INJURIES TO THE NEWBORN DURING BIRTH AND THEIR TREATMENT*

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I wish to present for your discussion the subject of birth injuries to the newborn during labor, as this is one of the most frequent accidents we meet with in the practice of obstetrics. We hear much about the hazards of child birth to the mother and the seeming impossibility of decreasing the maternal mortality rate. Very little is said about the new born infant. How about the infant mortality rate? Is it increasing or decreasing? Where does the responsibility rest? What can be done to reduce the rate? I wish to give you some of my impressions on the subject and if I am able to convey to you just one point that may save the life of just one infant, I will feel that my efforts have been well repaid.

More infants die each year in the United States, during labor or within three days following birth, than we lost men during our entire participation in the World war. And it is a fact that in at least 40% of all properly conducted autopsies on newborn infants, who are stillborn or die within three days after birth, intracranial traumatic lesions of some sort are discovered. It is this injury of the newborn upon which I want to put the greatest amount of emphasis. It is my opinion that too many of us are prone to sidestep the issue and not face the facts of the case. More autopsies should be done on these deceased infants to determine the cause of death. We should then hold a postmortem on the methods of delivery in each particular case in an attempt to determine why the accident happened and what should have been done to prevent it. Without an autopsy the cause of death is so often incorrectly ascribed to asphyxia because the majority of seriously traumatized infants show the clinical picture of deep asphyxiation. The physician is usually reluctant to pronounce the infant's death as a result of parturient injury because unfortunately it is the opinion, both among the profession and laity, that fetal injuries are the result of a lack of proper skill on the part of the physician. This is an injustice and it is our duty to change this opinion. Medical ethics should require us, if we do not have the proper respect for this unfortunate situation, which faces us all, not to criticise the physician for losing a baby due to birth injury because it is a fact that a large per cent of the autopsies showing intracranial injuries have occurred in the so-called spontaneous normal labor.

It is this reluctance on the part of the physician to face the facts that is the cause of many deaths. If the physician would search for possible injury, whenever the new born infant seems to act abnormally, prompt and proper therapy would certainly save many children now doomed to death or physical and mental defects.

This newer knowledge that the child can be more or less seriously injured in the course of a normal and spontaneous labor does not relieve us from all responsibility for such injuries. The pronounced trend of modern obstetrics, ever increasing, toward the operative procedures in the care and termination of labor is an important etiological factor in the production of fetal injury. It is a fact that the incident of birth injuries to the child is keeping pace with this trend and will continue to increase if the teaching of some of our ultra-modern obstetricians prevails. Ehrenfest says, "No amount of personal technical skill, unavoidably acquired at the cost of many fetal lives, in my belief, could neutralize the augmented risk to the child of a routine version followed by immediate extraction for the sole purpose of shortening the suffering of the parturient woman or made necessary by the elimination of important accessory expulsive force in twilight sleep. No personal effort of the accoucheur could obviate the dangers of a sudden and excessive compression of the fetal head quickly forced through the unyielding birth channel by a large dose of pituitrin."

The prompt recognition of a birth injury remains the responsibility of the obstetrician, and in a general practice as you physicians are, the treatment must be well in mind and you must be prepared to institute it immediately.

The first point I wish to discuss is the mechanism of intracranial hemorrhage. We are all acquainted with the fact that the vital vasomotor and respiratory centers are in the medulla and upper cord. These are fully developed at birth and are the only parts of the central nervous system needed at birth. The cerebellar and cerebral hemispheres are undeveloped at birth and seemingly withstand greater trauma and anoxemia than the cells of the fully developed cortical tissue. The spinal cord below the phrenic nu-

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*Read before the Seventh Councilor District meeting, Crete, October 24, 1929.

cleus is likewise immature and not essential to immediate life. Therefore, it is evident that whether a baby is living or dead at birth is dependent on a block of nervous tissue lying between the tentorium and the third or fourth cervical spinal segments. This block of tissue is well protected by the heavy rigid base of the fetal skull and the muscles of the neck. The bones above the base are soft, easily moulded, and caused to override, the parietal bones usually overriding both the frontals and the occiputal bones. Therefore, moulding occurs above the base. The dural septums are extremely important structures. The tentorium arises along the edges of the base of the skull and to that extent are fixed, but its fibres join in the sagittal line to form the falx cerebra which acts as a ridge pole. The fibres of the falx except at the extreme anterior portion arise from the flexable vault to sweep back to its insertion into the tentorium. The distortion of the vertex through the ordinary moulding in the normal vertex position does not generally effect the rigidity of the tentorium. Thus the cortex stands the pressure and the dural septi prevent the pressure being transmitted to the vital area of the medulla. However, in conditions where very sudden pressure is applied to the vertex the fibres do not stand the strain and tear, thereby allowing this pressure to be transmitted to the medulla and increased by herniation of the medulla into the foramen magna, due to lack of support. The tearing of the falx and particularly the tentorium causes further increase of pressure due to accumulation of blood from bleeding in and about these vital areas below the tentorium. As long as the tentorium and falx are intact so long is the medulla uninjured. Compression of the elastic skull in one direction, in general, causes compensatory elongation of the diameter in another direction. This puts a strain on the dural folds which, if too sudden and unequally applied, is too severe for their integrity especially along the edges of the tentorium. Suction due to negative pressure after dilatation and especially after rupture of the bag of waters causes meningeal and brain tissue hemorrhages. Long delay in expulsion of the head is marked by hyperaemia of certain parts of the brain with concommittant anoxemia of other parts. Sudden overlapping of adjoining cranial bones will lead to laceration of the underlying sinuses due to their engorgement.

The severe injury, if not causing death, becomes the source of a group of very definite symptoms, now more or less recognized, if we give close attention to this problem. These symptoms are caused by hemorrhage and injury to nerve tissue. Nystagmus is a very frequent symptom which is rarely looked for and it occurs in 35% of normal deliveries, 80% of all first born, and 100% of all abnormal presentations. Exaggeration of the reflexes is usually considered a normal finding in new born babies but is due no doubt to physiological birth trauma, comparable to physiological cervical and perineal trauma. Sighing respirations, difficulty in nursing, high pitched cry, difficulty in getting the infant to cry, cyanosis, and convulsions are signs which we all recognize as evidence of trauma to the newborn infant and should lead us to investigate further as to the condition of the baby. Pressure on the head exerted on the brain causes vagus stimulation. This slows the heart and interferes with the circulation, resulting in lowered irritability of the medulla. Stimulation fails to call forth the first respiratory movement and asphyxia results.

It is not my intention to discuss with you at this time the many factors involved in the etiology of traumatic intracranial hemorrhages of the newborn. In discussing treatment, however, it is probable that I should mention a few of the more common etiological factors because prevention is the best treatment which we have to offer. Prematurity leads to greater danger of intracranial hemorrhage because there is less bony protection and a greater friability of cerebral vessels. Cranial injury is more frequent in breech presentations. It is generally stated that the chief dangers to the fetus are asphyxia and compression of the cord; hence the time honored maxim of eight minutes from birth of the umbilicus to the delivery of the head. This desire for haste has been the cause of many fatalities, first because of too sudden and forcible compression of the head, and secondly from too severe and sudden traction on the infant with the resulting laceration of the spinal cord from excessive elongation. High forceps, improper application of forcep to fetal head, version, extraction, and tumultuous labors are probably the most frequent causes of intracranial hemorrhage. The use of pituitrin to stimulate the uterus has proven a very frequent agent in the production of intracranial hemorrhage.

Williams declares that "Pituitrin is contra-indicated unless the head is below the spines and the cervex completely dilated. Then it is dangerous, because of the possibility of tetany and resulting interference with placental circulation and intrauterine asphyxia resulting." He says that it should not be given until preparations have been made for forceps delivery. De Lee is even more radical in his opinion. He believes that forceps delivery is much safer because it is controllable. One should learn to recognize and look for the signs of distress of the infant while still in the uterus. Change in the fetal heart tones, slowing with each contraction and becoming slower as labor proceeds, with a failure to return to the normal rate between pains, the passing of meconium or meconium-stained fluid in cephalic presentation are signs pointing to threatened intra-uterine asphyxia, and their recognition is indication for an operative delivery. However, let me caution you, nothing should be done to shorten labor that is progressing normally, particularly if it is premature labor. If the perineum is an obstacle due to its inelasticity an episiotomy is indicated. One should remember that intervention always increases the risk to the child and last but not least improper management of the infant who is only physiologically traumatized may cause unreparable damage to the central nervous system. One must keep in mind that 80% of babies who die at birth, or shortly after, have intracranial hemorrhage. Whenever a baby does not breath promptly, it probably has an intracranial hemorrhage. Gentle maneuvers for resuscitation are very essential. It is my opinion that the following is the best method for resuscitating a newborn infant: The child is placed in a warm blanket and surrounded by heat. The physician covers his fingers with gauze and cleanses the mouth and nose of mucus following the stroking of the throat. A tracheal catheter is used to cleanse the pharynx of mucus then the larynx and trachea. The tracheal catheter is used to cleanse the pharynx of mucus then the larynx and trachea. The tracheal catheter is left in the trachea to provide a passageway for respiratory movements of the air, during artificial respiration which is carried on until either the baby breathes spontaneously or the baby's heart ceases to beat. Meanwhile the baby should be given at least 20 cubic centimeters of whole blood, preferably the father's or mother's blood, into the buttocks. I believe that the injection of whole blood is one of the best prophylactic measures that we have at hand in the treatment of intracranial hemorrhage and I believe that it should be given routinely in all breech and difficult deliveries just as soon after the birth of the child as it is possible to give it. Remember that an asphyxiated baby, and especially one in whom the asphyxiation is due to intracranial hemorrhage, is a baby in shock and the best results should be obtained by practically the same methods that we use in the treatment of shock in the adult; gentle movement, heat, constant observation with stimulation when indicated, artificial respiration, insuring patency of trachea with tracheal catheter and not the many obsolete violent methods so commonly used for they only increase the damage already done.

A discussion of the many other forms of injury which the infant may sustain at birth will be limited, for no obstetrician could ever be expected to accumulate sufficient personal experience to discuss authoritatively on every form of injury.

We all frequently see a *caput succedaneum* resulting from negative pressure. It is usually of no consequence, other than that of deceiving the inexperienced who erroneously interpret the gradual descent of its lower pole as a sure proof that labor is progressing satisfactorily. Sterile vaseline dressings applied to any abrasions or small ecchymoses over the caput will prove sufficient treatment.

Cephalhematoma is another condition frequently found. We all know that it is a hematoma between the flat skull bones and their periosteum. It is most frequently found in cases of pronounced pelvic malformation. The moulded head is too firmly held in the contracted pelvis to allow any recession in the interval between contractions. The skin of the skull is pulled back and forth. This recurrent displacement of the soft tissues against the underlying harder bone results in stretching and in eventually tearing some of the blood vessels underneath the periosteum. Retarded ossification is supposed to favor the formation of a cephalhematoma by allowing an abnormal degree of overriding in the sutures during molding of the head. A true cephalhematomia usually appears on the second day or later. It is soft, elastic, and does not pit, is limited by sutures to the individual bone, and is not likely to effect the newborn. Occasionally a hematoma becomes infected, clearly indicated by rising temperature. Without complications cephalhematomas do best if let alone. Aspiration of the blood by means of a puncture is without distinct advantage and involves the risk of infection, and a bandage must be applied snugly whenever a hematoma is emptied to prevent its refilling. Incision followed by proper surgical treatment is required in every case in which sensitiveness, a rise in temperature, or local signs indicate the infection of a cephalhematoma.

Injuries of the scalp occur most frequently in forceps delivery, especially improper application or if the forceps have been used to effect rotation of the head. Occasionally lacerations or contusions of the scalp have been seen after careless or rough examinations. These traumatic birth injuries of the scalp are best treated by the ordinary methods for treating any superficial wounds, antiseptics with dressings that protect against further infection.

The frequency of injuries of the cranial bones vary with the exactness with which the infant is examined. There may be fissures or fractures and the symptoms vary with the degree with which the bone is damaged. There can be no doubt that slight indentations, immediately correcting themselves, mere fissures and not depressed fractures, in many cases for this reason remain unrecognized. Marked and serious symptoms will appear only from a coincident secondary traumatism of intracranial tissues. Clinical evidence justifies the assertion that indentation and fractures of bone which causes no immediate symptoms are most unlikely to effect the child in later life. Many of the lesser depressions disappear spontaneously. The deeper ones are apt to become permanent and may prove to be more or less disfiguring. The most common cause of serious cranial injury is the forcible extraction of the head. One of the simplest corrective procedures for a symptomless indentation of a flat skull bone is the manual redressment obtained by squeezing and massaging the bone surrounding the depression. For a case of marked indentation, with symptoms, careful operative elevation is the treatment. Even in the absence of immediate symptoms it is best to follow this treatment in deep indentations as a prophylactic measure against such possible delayed consequences as Jacksonian epilepsy.

Injuries of the vertebral column probably never occur in spontaneous delivery but are fairly often caused by manipulation especially in version and extraction. When death does not occur immediately the clinical picture is characterized by the paraphegia of both the lower extremities usually associated with a paralysis of the muscles of the abdominal wall. A few days later incontinence of the bladder and anus will be noticed. In some instances the gradual improvement of the palsy, and a final disappearance of all symptoms has been recorded, probably coincidental with the gradual absorption of a hematoma that had compressed the cord from without. The extent of the paralysis will allow localization of the site of injury. X-ray examination should be made of every case of suspected spinal injury. The treatment giving best results is that of prophylaxis. Since these injuries occur most frequently in the course of breech labors, either primary or secondary to version, great care should be used in the delivery of these cases. However, in the vertex presentation the cervical section of the vertebral column is exposed to damage near the end of the second stage at two definite times: (1) If in a forceps extraction the head is forcibly pulled down and at the same time bent back to protect the perineum; and (2), if, with the anterior shoulder firmly caught behind the symphysis, delivery of the posterior shoulder is effected by pulling the rotated head upwards. This is a maneuver that will lead to excessive lateral flexion under tension. Spinal puncture, by which a part of effused blood is withdrawn, is likely to procure immediate relief of symptoms. In every case of diagnosed or even suspected injury immobilization is essential.

Facial paralysis, uni- or bilateral, frequently occurs following forceps delivery and is most frequently of a peripheral type. However, a facial palsy can be seen after spontaneous labor and it is obvious that in a case of forceps extraction the blame for the injury cannot always be placed on the operation. The palsy is usually unilateral. The infant suffering from a paralysis of the facial muscles offers a very characteristic appearance, and I feel that I need not enlarge on this. The typical facial palsy of the newborn, caused by an external injury, almost always disappears without any special therapeutic attention. In those cases in which the symptoms continue for more than two weeks it is well to use the galvanic current to prevent their secondary atrophy and a possibly permanent, slight asymmetry of the face.

Torticollis is not an important and frequent birth injury although it is very commonly considered so. It is most often a malformed sternomastoid muscle which has been injured during birth. The traumatization of this muscle during birth in most instances represents a hematoma. In rare instances a complete laceration of the muscle does occur although it is very unlikely except where the muscle is extremely short and weak. Injuries of the sternomastoid muscle at birth, as a rule, are of little significance to the child and they require no special therapeutic attention.

Fracture of the clavicle is the most frequent injury of the infant's shoulder girdle. It may occur in both breech and vertex labors. Too forceful pressure against the clavicle during extraction of the aftercoming head may fracture the clavical at the point of pressure. Too strong pressure against the humerous to bring the arm down may be transmitted along the shaft of the humerus to the clavicle. This force will cause the clavicle to bend and possibly to break. Strong traction on the arm in the management of a breech labor may injure the clavicle. Fixation of the shoulders with adhesive straps or of the upper arms against a T-shaped splint on the baby's back are very annoying and irritating to the child and many authorities believe them to be unnecessary because complete union is very frequently shown within ten days without particular attention. If in rarer instances the immobility of the broken ends seems to persist over the first week, the arm on the affected side may be immobilized.

Brachial birth palsy is very rare and may be due to direct compression of the brachial plexus by the end of a forceps' blade. Pressure exerted on the plexus by the finger during the extraction of the aftercoming head is a factor well recognized, and most obstetricians lay stress on the importance of placing the tips of the index and middle fingers over the shoulders, and not on the sides of the neck, but on the sternum of the infant. The predominating clinical picture of typical brachial birth palsy is that the affected arm hangs limply from the shoulder with an inward rotation and with the fingers usually clenched. Continued observation reveals the fact that the baby does not raise, adduct, or rotate the arm or bend it at the elbow. Infants with this injury show undeniable spontaneous recovery in by far the larger number of cases, therefore the early treatment necessarily must be conservative. The arm is placed in the position of physiologic rest, that is, held in the position by an appropriate splint in abduction, elevation and outward rotation. The arm is massaged twice daily and followed with these manipulations: External rotation with or without abduction of the shoulder; full flexion and extention of the elbow; full supination of the forearm, dorsiflexion of the wrist and fingers, and abduction of the externally rotated arm while the scapula is depressed by a hand on the shoulder. Sever says that when a treatment of this sort is instituted without delay in every case, there will be found few instances in which the paralytic symptoms would not disappear, and would permit no infant to develop a secondary internal rotation contracture and a posterior subluxation of the shoulder joint. A case which does not show early signs of recovery should be referred to an orthopedist for further study of the injury.

CHRONIC EMPYEMA—THE CAUSES OF CHRONIC EMPYEMA

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DEFINITION

Chronic Empyema refers merely to any type of empyema in which healing is delayed or one in which empyema is recurrent after apparent recovery following drainage. The element of time as a distinguishing factor between acute and chronic empyema cannot be sharply defined. The majority of cases of acute empyema not complicated by unusual pathology will recover if adequately treated in from six to ten weeks. Various factors such as duration previous to drainage, type of organism, extent of involvement, thickness of the fibrinous envelope, adequacy of drainage and after care as well as intrinsic resistance against infection influence the time of recovery in acute empyema. In the literature most cases that are classed as chronic have had a duration interval of three months are more. It may be fairly stated that an empyema remaining unhealed three months after the institution of drainage is chronic. In some instances chronicity existed previous to the time of first observation, or in other words the empyema has been unrecognized until the acute stage has passed. Also the nature of the associated pathology may be such as to determine the factor of chronicity from the start.

ETIOLOGY OF CHRONIC EMPYEMA

Chronic empyema is caused by any condition that delays the healing of acute empyema. In most cases the cause is recognizable and can be removed or it may be anticipated during the treatment of the acute stage and prevented. More can be accomplished by anticipating and removing causes of delayed healing in the acute stage than can be accomplished by later cure. Hedblom classifies chronic empyemas according to the cause of the delayed healing into the following three groups:

1. Latent or undrained empyema.

2. Delayed healing following early drainage.

3. Persistent or recurrent empyema following drainage.

LATENT OR UNDRAINED EMPYEMA

The cause of *latency* due to *failure of recognition* and *early drainage* can be attributed generally to carelessness in examination although some cases result from late observation by the physician. Many cases are erroneously diagnosed pulmonary tuberculosis or lung abscess and occasionally bronchiectasis and even anaemia, arthritis and nephritis, because the associated pathology may present pronounced symptoms, may be diagnosed. Diagnostic aspiration with failure to obtain pus is accounted for because the aspirating needle has not been inserted deeply enough to penetrate a greatly thickened pleura or because the pus is encapsulated anteriorly or in the paravertebral gutter, at the apex or between the lung and the pericardium. Multiple empemata or accessory undrained pockets may be present. Failure of prompt institution of drainage treatment is the cause of delayed recovery. In a series of 310 cases reported by Hedblom 105 or 33 per cent presented evidence of delayed initial drainage as a factor in the production of chronicity.

DELAYED HEALING FOLLOWING EARLY DRAINAGE

About half of the cases of chronicity fall into this category. The causes of chronic empyema in the group in which drainage is instituted early are:

A. Incomplete drainage due to
1. Partial healing of the drainage opening.
2. Failure to secure dependent drainage.
3. Inadequate drainage of secondary pockets.
4. Incomplete irrigation of secondary pockets.

Partial healing of the drainage opening represents the most common cause of failure to secure healing in acute empyema treated by open drainage. Healing in the soft tissues progresses more rapidly than obliteration of the cavity with resultant narrow sinus and inadequate drainage. Repeated transient healing of the sinus with successive perforations and reestablishment of the sinus may occur.

PERSISTANT OR RECURRENT EMPYEMA FOLLOWING DRAINAGE

A little less than one third of the cases of chronic empyema occur as a late complication following the healing of the drainage wound. The sinus is reestablished by operation or by spontaneous perforation. In some of these cases the cavity is probably persistent rather than recurrent. The cavity may enlarge considerably after the drainage sinus has closed.

The causes of persistent or recurrent empyema are:

1. Reinfection: Rarely a typical reinfection in a pleural cavity which has entirely healed and remained so for years has been observed.

2. Early closure of the drainage sinus: Obliteration of the cavity fails to keep pace with the healing of the soft tissues surrounding the drainage sinus. After the latter is healed reaccumulation of pus and enlargement of the cavity takes place.

3. Associated pathology:

A. Multiple abscesses and cavities more or less encapsulated in thickened pleura.

B. Bronchial fistula: Such fistulas are more common as a cause of chronicity than is generally recognized. There were eighty cases (28.38 per cent) in this series. Thirty-three (36.66 per cent) occurred in the ninety recurrent cases (29 per cent of the whole series), indicating that the fistulas are largely the result of lack of drainage. In seventeen, the fistula resulted from the perforation into the bronchus of an unrecognized empyema. The presence of small fistulas that would ordinarily escape notice has been demonstrated, particularly by the use of sodium hypochlorite solution. Probably the eroding action of the fluid on superficially necrosed areas opens up terminal bronchi plugged by such material. Bronchial fistulas are likely to become chronic, if the cavities are large, by preventing the inflating action of the increased intratracheal pressure during coughing; straining and so forth; and also by reinfecting the cavity. A sinus or cavity communicating with a bronchus may also become completely lined with epithelium by its proliferation from the mouth of the bronchus. I have seen small cavities, that had persisted for years, heal following simple cautery destruction of this lining endothelium.

4. Persistent infection in the pleura plays a part in many cases of recurrent empyema. It will probably always be responsible for reinfection after chemical sterilization of a cavity.

5. Other causes of chronic empyema are:

A. Tuberculous pleuritis: These cases are of special importance from a diagnostic standpoint because they are so frequently treated for years without being recognized as tuberculosis. They may simulate the ordinary type of pleuritis except for the tendency to chronicity. Demonstration of the tuberculous nature by animal or laboratory observance of the tubercle bacillus is difficult. An empyema originally non-tuberculous may become so through rupture of a sub-pleural tuberculous abscess into the pleural cavity. In Hedbloms series 9.35 per cent of chronic empyemas were positively proved cases of tuberculosis.

B. Foreign bodies:

1. Segments of rubber tubing: The accidental or careless loss of a drainage tube in the pleural cavity is infrequent but occurs often enough to necessitate careful fixation of the tube. Short tubes should not be used. The x-ray has failed to reveal the presence of a drainage tube at times.

2. Fragments of necrosed ribs: Ribs should be resected well back and their ends buried in soft tissues to avoid the necrosis loss of a sequestrum in the pleural cavity.

3. Bismuth paste with infected pus has been present in some cases.

4. Hair-balls and other structures from derived cysts and teratomata are very rarely associated with empema.

5. Living or dead echinococcus cysts have been found in empyema cavities.

6. Pleural calcifications in old people.

C. Actinomycosis: Blastomycosis and malignant degeneration are rare causes of chronic empyema.

D. Massive compression of the lung: This condition is the result of the factors previously mentioned, i. e., failure of drainage or inadequate drainage rather than a cause per se. It deserves special mention nevertheless because the thick fibrinous or fibrous compressing corset must be dealt with or the chest wall collapsed to effect a cure. The long standing large purulent exudate compresses the lung for months and a thick tough capsule forms about it. Re-expansion of the lung is then impossible. Open drainage of a sterile effusion should not be instituted and drainage of a massive infected effusion during the sero-purulent stage should be accomplished by the closed method to avoid this condition.

E. Fibrosis of the lung: Generalized fibrosis if extensive prevents re-expansion and spontaneous healing of empyema. The duration of compression seems not to determine the amount of fibrosis nor the probability of re-expansion after decortication is done. Nearly complete expansion has taken place following decortication of a lung that had been compressed by a thickened visceral pleura for several years.

SYMPTOMS OF CHRONIC EMPYEMA

The persistence of drainage beyond the normal time for recovery from an acute empyema is the most characteristic evidence of chronicity. No hard and fast rule can be drawn as to the limit of time that an acute empyema may run. Most uncomplicated cases heal in from 3 to 6 weeks but hope may be entertained for uneventful recovery for a longer period. Cases of recognized chronicity usually have existed three months.

The most characteristic symptoms of undrained or recurrent empyema is a *chronic productive cough.* The amount of purulent sputum is large in those having a bronchial fistula and at times in cases in which bronchial fistula cannot be demonstrated. The onset of cough and malaise may be insidious and simulate tuberculosis. Accompanying phenomena of sepsis such as anaemia tachycardia, multiple arthritis, clubbed fingers and nephritis will exist in degrees dependent on the duration of the disease. If the drainage is intermittent by alternate closing and opening of the fistula the symptoms may likewise improve and recur. In some cases the period of apparent complete recovery may extend over a number of years. Persistence of cough and failure to regain normal health following an apparently healed empyema should prompt thorough and intensive study to eliminate the possibility of concealed empyema.

THE INFECTING ORGANISM IN CHRONIC EMPYEMA

The fact of chronicity is not materially influenced by the type of the organism except when the tubercule bacillus is considered. Of the ordinary pyogenic organisms all are found without definite preponderance of any being a notable feature. A mixed infection is common.

In one series reported by Hedblom the following organisms were found in the frequency noted below:

A. Single infections:

Pneumococcus	16
Staphylococcus	11
Streptococcus	11
Diphtheroid B	1
Sterile	5

B. Mixed infections:

Pneumococcus and Streptococcus	7
Pneumococcus and Staphylococcus	3

The tubercle bacillus is the only organism frequently met with that in itself determines chronicity. Tuberculosis of the pleura is a common cause of delayed healing. A consideration of this condition is peculiarly fitting in a study of the causes of chronicity, because a great many cases are treated for years without being recognized as tuberculous, because of the frequently observed similarity to the purely pyogenic type, and because in a considerable proportion tuberculous cases fall into the non-tuberculous group only *because positive proof of tuberculosis is lacking.* There are, furthermore, very good grounds for the belief that certain cases of nontuberculous empyema become tuberculous during the process of treatment. Tuberculous empyema may be divided into four groups:

1. Tuberculous empyema proved by biopsy or the demonstration of the tuberculosis bacilli.

2. Clinically tuberculous empyema.

3. Empyema in patients having an active tuberculous focus.

4. Idiopathic empyema or empyema in patients having a preceding idiopathic pleurisy with effusion.

There were twenty-nine (9.35 per cent) positively proved cases of tuberculous pleurisy in this series. Twenty-five were proved by microscopic examination of the excised pleura, two by demonstration of the tuberculosis bacilli in the exudate, and two by guinea-pig inoculation. There were eight cases with a definite clinical diagnosis of tuberculosis, sixteen of empyema with associated active tuberculous lesions, and twenty-seven of idiopathic pleurisy with effusion, in which empyema later developed.

Repeated examination of the exudate from chronic empyema sinuses, and biopsy on excised pleural tissue will undoubtedly show a larger proportion of these cases to be tuberculous. In 1922, at the Mayo clinic, 17.7 per cent of the total number of cases were proved to be tuberculous, as against an average of 6.9 per cent during the four preceding years. The larger proportion of recognized tuberculous cases may be attributed to the more thorough search for positive evidence of the presence of tuberculosis.

Special Article

PROPOSED NARCOTIC LEGISLATION

J. W. DUNCAN, M. D.,
Omaha, Nebr.

When the Harrison Narcotic Act was passed in 1914, the Federal Government recognized that it had no control over intra state commerce in narcotics except through the Federal Taxing Power.

As an evident subterfuge, this law which was designed to control narcotic commerce, was made a tax measure and each year the members of this society and the profession at large have been obligated to pay a tax to prescribe narcotics for which they are already licensed by the State from which they hold certificates to practice.

Further encroachment upon our professional liberties came through the adoption of the 18th Amendment and the Volstead Act. Now comes a bill introduced by Representative Porter of Pennsylvania, House Roll 9054, further restricting the latitude of the physician in his professional use of narcotics. The bill as proposed is manifestly unreasonable, and some of its provisions are absurd. These include the following:

1. A license from the U. S. Commissioner of Prohibition to lawfully prescribe narcotics. This is in addition to the license we must now obtain under the Harrison Act from the Commissioner of Internal Revenue and under which we are taxed. The proposed bill also applies to dentists, veterinaries, and druggists.

2. No one who has ever been convicted under a Federal or State law relating to narcotic drugs, no matter how trivial the offense, can ever be licensed under the act, and if he is ever convicted under this proposed act, he can never again prescribe narcotics legally, nor be licensed under the act.

3. Narcotic addicts cannot be licensed, and the commissioner decides what constitutes addiction and when it ceases.

4. The Commissioner is apparently empowered to revoke licenses, to determine the period for which licenses will issue, how often and what quantity of narcotics may be prescribed, and what form of records are to be kept, etc.

5. If the Commissioner decides to revoke a license, he does not have to notify the licentiate of the charge against him, nor does he have to show cause why the license should be revoked.

6. If the accused person desires to subpoena witnesses in his behalf he must inform the Commissioner in advance to what these persons will testify. The Commissioner then may or may not subpoena them, as he wishes.

7. The accused licentiate may appeal from the courts but his license stands suspended in the meantime.

Porter has also introduced House Roll 9053, creating a Commissioner of Narcotics. There is nothing to indicate that problem of narcotic control will be facilitated by this measure if it were to become a law.

On March 26th, Porter introduced a third narcotic bill, House Roll 11143, creating a bureau of narcotics in the Treasury Department. This, bill, if it is passed, will make impossible the importation of the rarer alkaloids and derivatives of opium and coca leaves for the purposes of research. Many of these are not now manufactured in the United States. Porter has been requestion by the American Medical Association to provide in his bill that laboratories desiring to investigate the properties of these rarer derivatives might import them under proper regulations. The bill has not yet been amended to comply with this request.

The Federal Narcotic Service has repeatedly alleged that narcotic addiction is prevalent among physicians. It is claimed, also, that there is no method by which physicians addicted to the use of drugs can be prevented by law from securing them. This ignores the fact that the Medical Licensing Boards of the State are empowered to revoke the licenses of those who are addicted to the use of narcotic drugs or for the delinquencies that associate themselves with addiction.

If the Porter bills pass, you and I authorized by our State to practice medicine, cannot use narcotic drugs in connection with our practice until a Bureau at Washington, under rules and regulations of its own making, says we may.

The bills have an active organization behind them and have the support of Mr. Hearst as an unwarranted invasion of State rights and unreasonable centralization of police power in Washington, and is urging in the next moment the passage of these laws which are certainly a long step in the direction he is opposing. In fact, the reply of Representative Porter to an editorial in the Journal A. M. A., was released as nearly as I know, solely through the Hearst Press.

One of the members of the Omaha-Douglas County Medical Society wrote to our U. S. Senators and the 6 Nebraska members of the Lower House expressing his opposition to the bills. Replies from all 8 gentlemen were received. The letters are noncommittal except in two instances. One letter states that narcotic drugs come in the U. S. perhaps 50 times the legitimate demands. This is an approximation only, and a poor one at that, for, of course, this figure might be multiplied by 100 and still not be accurate.

The problem of narcotic control is one of international scope. From the days of its organization the League of Nations has given it earnest consideration.

In 1927, when the writer was in Geneva, he met a member of the secretariat, a physician, who was in charge of collection of the statistical data in connection with the matter. This physician said that it was quickly realized by everyone concerned, that the problem could be solved only by reducing the acreage of the poppy plant and the coca plant to the extent that would supply only legitimate medical demands for the alkaloids of opium and cocaine. The British interests in China nullified all efforts to reduce the poppy acreage there, and Dutch interests in Dutch Guinea refused to decrease their importation into Holland of the coca leaf. The two other chief sources of opium, Jugo-Slavia and Turkey, were equally adamant. As we all know, many of the alkaloids are extracted by German chemical firms, and Germany, although at that time not admitted to the League, was willing to reduce manufacture if concerted effort were made. The physician-statistician estimated, at the time the writer talked to him, that the production could be reduced ten thousand fold of both opium and coca alkaloids without jeopardizing legitimate narcatic demands.

Recent statistics show that one drug manufacturing concern in Alsace, France, in 1928 manufactured 2½ times the amount of heroin needed for legitimate purposes in the entire world, and the figure for other alkaloids of crude opium is no doubt, the same.

Addiction the world over is becoming an alarming problem. It is estimated that Egypt, with a population of 14,000,000, has 500,000 addicts.

The advisory committee of the League of Nations on the traffic in dangerous drugs, has adopted finally a plan to limit the manufacture of narcotics through a central authority, and although our country is not a member of the League, it will, no doubt, adhere to any scheme offering reasonable hope of meeting the situation.

The facts are presented to make clear the utter futility and worthlessness of such proposed legislation, as the Porter bills. They can only restrict the legitimate activities of our own and allied professions through which, as we all know, only an infinitestimal amount of narcotics is diverted to the use of addicts, and if there is a remedy for such abuses as do exist, so far as they relate to physicians, it should come through our State medical practice acts.

The Trustees of the American Medical Association have filed protests against the enactment of the original Porter narcotic bills. It is to be hoped that the Nebraska State Medical Association, at its annual meeting this month, will reinforce the protest already on file by the American Medical Association.

PROGRESS

G. O. REMY, M. D.,
Ainsworth, Nebr.

This is a world of progress. Time moves in cycles. The high point of one cycle is the low, or starting point of the next. Each cycle, or period of time is marked by some special achievement.

Our age is noted for scientific, mechanical and industrial achievement. The last fifty years has produced greater results along all these lines than any preceding one-hundred years. But this is not surprising when we remember that this age had the accumulated wisdom of all past ages as a foundation or starting point from which to build.

In this era of progress the science of medicine and surgery have not been the laggards. This is the day of the great surgeon and the equally great internist. Scientific laboratory diagnosis has taken the place of the old hap-hazard bedside diagnosis of the Fathers of Medicine.

Undoubtedly more is known today along the scientifically-exact side of medicine, and the scientific and technical side of surgery than ever before in the history of medicine, and yet when we consult vital statistics, we are forced to recognize the fact that there has not been a corresponding decrease in the death rate. Allow me to quote here from an article written by an old and prominent surgeon of Omaha, Nebraska, and printed in "*The Nebraska State Medical Journal*" for October 1927. "There are about 25,000 men doing surgery in the United States, and we have the opinion, gathered, it is said, from the experience of the Rochester Clinic that only about 10,000 are really competent. In confirmation of this let us see what the Bureau of Vital Statistics has to show: The increase in the death rate from 1905 to 1922 in goiter is 250%; in gallstone (gallbladder and duct-infection), 77%; appendicitis 31%. These are startling figures but everybody who is in touch with the times is not surprised. Because a comparatively few exceptionally skilled men may do these operations with a very low mortality is no reason why the man illy trained or inexperienced can do them. Then we wonder why this is so. If physicians are better educated along the scientific side of medicine and have developed a system of exact scientific laboratory diagnosis to take the place of the old clinical variety; if surgeons have improved in both knowledge and skill, why should not statistics show a decrease instead of an increase in the death rate? We were shocked by the enormous death losses in our armies during the World War. An epidemic of Asiatic Cholera along our southern sea borders caused us all to stand aghast with horror, but such local death losses seem almost trivial when compared with 50% increase in the general death loss from all disease all over the United States. There has been but one World War and we are all hoping and believing that there will never be another, and cholera is a thing almost unknown at the present time, but the increase in the normal death rate all over the country is going on steadily from year to year and will continue to go on, and perhaps increase, until some way is devised by which it can be checked. But this cannot be done until some one has found out the cause of the increase and has been brave enough to make an honest effort to remove it.

Some one has said "A little knowledge is a dangerous thing". Might it not be true that too much knowledge wrongly applied is as bad as too little? Are we not, perhaps, becoming too scientific at the expense of the practical? If it is not possible to become too scientific, too learned in medicine, then may it not be that in order to advance our scientific knowledge—the doctors' side—we are getting too far away from the practical—the patients' side of the question?

The medical student of today, with his four or five years' medical course, the daily clinic, and his internship, has advantages and opportunities not even dreamed of by the student of fifty years ago, with his two years' course of about fourteen months in all, and almost no clinical experience. And yet, the student of fifty years ago, when he received his diploma felt he was quite a doctor and pretty well prepared for his work until he got up against his first few cases in practice and began to realize his responsibilities as well as his weakness. I know just how he felt. I had that experience.

The personal contact between doctor and patient has disappeared to a very large extent. Patients returning home from a hospital or clinic complain of the lack of personal attention. They say they are herded in and run through like putting cattle through a chute. Perhaps this manner of handling patients in the modern hospitals and clinics is a necessity, I don't know, and I would not think of disparaging laboratory diagnosis or the use of the many instruments of precision familiar to the modern physician, for I know that they must be of inestimable help in the hands of those accustomed to their uses; but when you see two blood tests made by two modern physicians and hear each doctor, in the most positive language, declare that these tests prove beyond a question that pus is present, and then witness the exploratory work to locate the pus and no pus is found, the patient as well as the old time doctor, unfamiliar with modern methods, might be excused if they should happen to smile. Or when a lady, stepping off a street car backwards, as women will sometimes do, receives a severe wrench of the ankle and is taken to a hospital when an x-ray picture is made of the injured ankle, and after studying the picture, the surgeon remarks, "I can promise you that you will be all right in not to exceed four days", then dresses the injury with a very neat removable plaster splint, and after inspecting the ankle daily for two weeks and finding it but little improved says, "I told you you could be out in four days, but now I tell you I don't know when you can be on this foot. I trusted the x-ray picture and it deceived me. If I had examined the ankle instead of the picture I would not have made such a blunder." One simply wonders, that is all.

Might it not be true that the younger men rely too implicitly upon the laboratory findings and fail to use the judgment and common sense with which nature has endowed them? Or, being taught so much theoretical and scientific knowledge in the schools, feel themselves competent to, and do attempt cases for which only the training and judgment, born of experience, can fit them?

The general appearance and reactions of the human body have been largely eliminated as factors in the location of disease, and the x-ray and the test tube have taken their places.

Three or four years time spent by a young man as mechanic's helper in an auto repair shop should endow him with a pretty fair idea of the working parts of an automobile; but with this as his only experience as to the handling and running of a car, I am sure you would not care to start out with him as driver of a car in which you were to ride over the canyon road with its ditches and gullies, its steep hills and precipices. You would want, on such a trip, the wheel to be in the grasp of a hand made strong and steady by experience.

We do know beyond a question that something is wrong with the general results that are being achieved by the profession today. I do not think that there is a lack of success all along the line. I believe that the conscientious, educated, experienced men of the profession are producing results today never before achieved, results in proportion to their better education and training, but something is holding down the average.

It is not the medical members of the twin sciences of Medicine and Surgery who are chargeable with this increased death rate. What is left of the medical treatment of disease is about all right, but there is so little left. A few men, faithful to the cause of medicine, have gone far in the adaptation of medicines to the healing of bodily ills, but the great majority of the profession is blood crazy. They have reverted to the blood letting of the early fifties, but in a little different form. The slogan has gone forth—Make a laboratory diagnosis and if you can find no cause for surgical interference then the case is too trivial for your consideration; send the patient home or keep him waiting in the hospital, he may get well any way, but if by any stretch of imagination or judgment you can find excuse for the use of the knife, then bleed him, bleed him until the blood runs white and his pocket book is empty. What the surgeon does not get for his half hour's work the hospital may take. The county will give him a decent burial and the family will get along some way.

We have, in our state as in every other state, a few standardized hospitals of which all doctors are justly proud. Why not have more of them? Why allow any hospital in the state to run except as a standardized hospital, under strict supervision of competent directors? This would at least guarantee that only surgeons eligible to membership in the College of Surgeons would do the operating. Are not the people in the outlaying districts of the state as justly entitled to good service as those living in the cities?

Is it not time that the whole body of physicians and surgeons call a halt and try to find out in what quarter the trouble lies? Certainly human life has not become so cheap, and the scramble for dollars and position so acute that we have forgotten the two major tenets of our profession, "the relief of suffering and the protection and preservation of human life."

DERMATOLOGIC CLINICS

ALFRED SCHALEK, M. D.,
From the University of Nebraska, College of Medicine,
Omaha, Nebr.

Case 9. The patient is a Negro who is taking treatment for syphilis. Syphilis is more prevalent in proportion in the colored than in the white race, but the central nervous system is involved only half as often. You see on his face and the back of his neck about a dozen flat whitish papules, 1 cm. in diameter. The shape and size is typical of a papular syphiloderm but the color is different. The diagnosis of a skin disease is at times difficult in Negroes on account of the changed color contrast on which, as a rule, we depend a great deal.

The patient has had a number of intravenous injections of neo-salvarsan and now presents himself with a generalized dermatitis brought on by the medication. The skin is rough and scaly and severely itching, but the usual redness is absent. Hyperaemia of the skin of Negroes is hardly recognizable and this may be the reason why the macular syphiloderm is seen so seldom in them. The skin reactions after salvarsan, varying from an erythema to a general exfoliative dermatitis, occur altogether too often. Fortunately we are able to neutralize the arsenic in the system and prevent prolonged injury with intravenous injections of sodium thio-sulphate. But it is my belief that many of these might be avoided with appropriate precautions. Inferior material made of impure drugs and insufficiently tested are dangerous and for this reason salvarsan should only be procured from reliable firms. Oxidation of salvarsan, if coming in contact with air, is another cause of trouble. It then changes in color from light to dark yellow and brown, becomes toxic and should be discarded. If the reaction is due to idiosyncrasy, it cannot always be avoided. These persons may, however, show a slight transitory erythema after the first or second injection. A good rule is to examine the skin after each treatment and stop it at once at the first warning. Unnecessary complications, also, no doubt, occur through the careless performance of intravenous injections. As they become more generally used, familiarity breeds contempt of small but important details. The intravenous administration of drugs is never a harmless procedure and trouble may follow when least expected. For this reason, I am certain, this method will not be continued, as soon as we will have a simpler and less hazardous method with the same or better effect.

Case 10. A girl, 19 years of age, had the present skin trouble for the last 9 months. It began with tiny vesicles between the fingers which rapidly break down and dry, forming dry red patches extending up the back of the hands and arms. They have sharply defined margins and itch only occasionally. The skin is inflamed, oozing and painful, but this is a complication brought on by a tight gauze bandage, left on 24 hours. The Wassermann test is negative and the general health is not affected.

Several years ago this affection would have been diagnosed as eczema like many other cases of the same type. The vesicular start, the change to dry scaly patches and the itching suggests eczema, but the sharp outlines, the location and the resistance to treatment speak against it. With the exclusion of eczema, squamous syphiloderm and psoriasis, the diagnosis of ringworm is assured. The name "ringworm" still implies to many the conception that the lesions must be ring-shaped with a clear centre. It is however due to a multitude of different fungi infections with a variety of clinical types. Extensive erythematous, sharply defined patches in the groins, under the mammae, and in the axillae, at one time called eczema marginatum, have for a long time taken their right place as fungus infections. More recently eczema-like (eczematoid) affections of the hands and feet have been recognized as being of a mycotic nature and were given the name epidermophytosis. This condition is becoming more and more widely spread and in a recent investigation at a college, 25 per cent of all the students were found affected with it. Epidermophytosis may be caused by the epidermophyton fungus, but the same clinical appearance may be produced by yeast cells, bacteria and other micro-organisms. At times a microscopical examination of scrapings from the skin will show the organism and determine its species, at other times it will fail.

The typical clinical features are usually sufficient for a diagnosis. The eruption may appear in different forms. Minute vesicles on the lateral surfaces of the fingers and toes are most common. Maceration may take place where opposed skin surfaces produce heat and friction and the skin assumes a white sodden appearance with painful fissures and pus infections as a complication. The dry scaly form spreading along the periphery with sharp convex borders, as in our case, is frequent. Epidermophytosis is more active in summer, as the mould flourishes in heat and moisture. Hyperidrosis or excessive sweating is often present and an aggravating factor.

Prophylaxis to prevent infection and re-infection is important. The fungi have a vigorous vitality and when dried in the skin may survive from six months to a year. Common sources of infection are the floors of bathrooms, shower baths and swimming pools. Frequent flushing with hot water is sufficient for disinfection. The use of wooden sandals and paper slippers are recommended in these places to stop dissemination of the infection. Leather is a frequent medium, in gloves, wrapping of golf clubs, and wrist watch straps. Cotton and wool harbors the germs and hose and towels, used by infected persons, must be boiled.

The aims of treatment are twofold: to peel off the outer skin removing the superficial organisms and to destroy the rest with strong parasiticides. If all spores are not destroyed, recurrences will occur. Treatment for this reason must be continued for a long time after the disease has apparently stopped. X-ray treatments have been followed by improvement, but since they have no direct fungicidal effects, this is symptomatic and temporary. Many local applications are in use, of which one of the best known is Whitfield's ointment, but none is dependable at all times. Salicylic acid is an excellent keratolytic. Mercurochrome, potassium permanganate, with varying benefit as parasiticides.
benzoic acid, chrysarobin, and others are used

I have used for some time a treatment, which I decided on on theoretical principles, with better results than I have had before. The parts are soaked in hot water for ten minutes and then scrubbed vigorously with gauze pads and plenty of soap, reaching all infected places. A zinc paste, containing ten per cent of sulphur and salicylic acid, is thoroughly rubbed in twice daily. The soap scrubbings remove the scales and soften the skin, the salicylic acid peels off the outer layers, the sulphur acts as fungicide and the zinc paste absorbs moisture and dries the skin. If after using the treatment for some time, it proves too irritating a rest should be taken for a while. The applications must be continued for some time after the skin appears to be normal and must be resumed at the first sign of renewed activity of the infection.

BULLETIN FROM THE LABORATORY OF CLINICAL PATHOLOGY, BRYAN MEMORIAL HOSPITAL

Staff Meeting, Jan. 10, 1930.

Miles J. Breuer, M. D., Lincoln, Nebr.

Function of the laboratory in pulmonary tuberculosis:

1. With the exception of finding tubercle bacilli in the sputum, there is no laboratory test that will make the diagnosis. There are, however, a great many laboratory procedures that are of value in the diagnosis and treatment of this condition.

When clinical evidence points strongly toward activity, and sputum is present, it is usually possible by proper methods, to find bacilli in it. If total twenty-four hour specimens of sputum are taken and concentration methods used, positive results are almost always obtained.

2. When once the specific diagnosis has been made, there are two tests that are of great value in estimating the extent of activity. The first is the differential leucocyte count, preferably of the Schilling type. An increase in the monocyte percentage means a large amount of tuberculous activity; and increase in the lymphocyte count points toward healing. An increase in immature forms suggests a complicating acute infection.

3. The second is the blood-sedimentation test. The rapidity of the sedimentation of corpuscles is a very close index of the amount of activity in the patient.

Both of the above tests are useful in controlling progress during treatment.

4. In cases where inoculation is desirable, the digestion-crystal-violet-potato method of Corper is of equal value, and much more convenient. Because it is easier to inoculate a half dozen or a dozen tubes of medium from the same patient than the same number of guinea-pigs, the method is actually preferable from the standpoint of results. Neither this method nor the animal inoculation method are infallible.

5. Because the effects, pathology, and symptoms of pulmonary tuberculosis are not confined to the lungs, but extend to every organ and function in the body, therefore, in the diagnosis and treatment of this disease, any and every laboratory test may be useful or necessary. A thorough knowledge of pulmonary tuberculosis means a complete training in internal medicine and all its branches.

DIFFERENT

"Do you refuse to pay me for taking care of your wife?"

"Oh, no, I don't refuse. I just refrain."

A STITCH IN TIME

Mrs. Lafferty: "Ten stitches did the doctor have to take in me ould man after the fight last night."

Mrs. O'Hara: "Tin? Was that all? Shure, when the doctor seen me poor husband carried in this morning, he says: 'Has any wan got a sewing machine?' "

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NOTICE OF PROPOSED AMENDMENT TO CONSTITUTION

It is proposed to amend Section 3 of Article VIII of the Constitution of the Nebraska State Medical Association to read as follows:

"Except that the Councilors shall be elected by a majority vote of the delegates present from that Councilor District at the meeting of the House of Delegates on the morning of the last day of the general session."

A FEDERAL NARCOTIC DICTATOR

The proposed Porter bill is meeting with much opposition from the medical profession as it proposes to set up a federal narcotic dictator. Physicians must register annually with the Commissioner of Internal Revenue, pay an annual tax and comply with the stringent regulations of the Harrison act. If the Porter bill becomes law, it will be necessary in addition for physicians to obtain licenses from the Commissioner of Prohibition, who is to be the narcotic dictator, under such terms as the commissioner himself prescribes. What the medical profession particularly resents is the wide latitude given the commissioner. For example, the commissioner may revoke a license without giving the licensee notice of the charges against him, if any. He merely places upon the physician the burden of proof to show why his license should not be revoked.

A MEDICAL STUDENT LOAN FUND

It may be safely assumed that it is no crime for a poor boy with ambition to aspire to a medical education. One must admire the courage of the poor youth whose soul is fired with the ambition and who has the courage in spite of the handicap of a lack of sufficient means, to undertake the task involved in pursuing a medical course requiring six or seven years to accomplish when funds are provided. The old saying, "Where there is a will there is a way", is still apt. Medical educators as a class are thought to discourage the poor boy undertaking a medical course; but ambition is not so easily squelched and every year each medical school probably has some entrants without sufficient means to complete the course. It has been thought that in some schools this class of students runs up to ten per cent of the total registrants, which may be a high figure. The writer has heard of a young man who worked himself through Harvard and an interneship in twelve years. There are those who wait table, stoke furnaces and room in physicians' offices answering night calls for a part of their subsistance and rooms. While such tremendous handicaps must affect scholarship to a degree, it must develop self reliance and character—assets of great value in later life. High scholarship alone does not make the successful practitioner as we all know. Some of the most noted men in medical history have records of indifferent scholarship.

The problem of the needy and worthy student has appealed to humanitarian agencies from time to time and efforts have been made to render financial assistance to those of good scholarship in the Senior year; some in the Junior and Senior years. With the required interneship year the problem of assisting internes has been added.

Several agencies assist worthy, needy students in the Omaha medical schools, notably the Nebraska Federation of Woman's Clubs. The need, however, exceeds the resources of the funds provided.

No doubt the membership of the Nebraska State Medical Association is as much interested in this problem of needy students as the Federation of Woman's Clubs and the Association at its annual meeting might do well to consider creating such a Fund.

UNCERTAIN ENCOURAGEMENT

Patient: "Doctor, how are my chances?"

Doctor: "Oh, pretty good, but I wouldn't start reading any continued stories."

The Incoming President

DR. K. S. J. HOHLEN

Dr. K. S. J. Hohlen

M. D., F. A. C. S.

Dr. Karl S. J. Hohlen was born in Wilhelmshaven, Germany, April 24, 1886. He came to this country with his parents when nine months old. He attended private and public schools in Peoria and Minonk, Ill. He attended Northwestern University School of Pharmacy and the Chicago College of Medicine and Surgery, graduating from the latter in 1908. He was interne at the Augustana and Frances Willard hospitals in Chicago; located at Hastings, Nebr., in 1910, and at Lincoln in 1912, where, since, he has been practicing surgery.

He has taken postgraduate work both in this country and Europe, having returned late last year from a trip to Europe where he did special work in neuro-surgery.

He has been chairman of the campaign committee of the Nebraska State Medical Association for some years and has accomplished some wonderful results in his work. He was president of the Lancaster County Medical Society in 1924. He is a Fellow of the American College of Surgeons. He was elected president-elect of the Nebraska State Medical Association at the annual meeting in Omaha last May, and will succeed to the presidency at the annual meeting in Lincoln, May 13. Dr. and Mrs. Hohlen have on son, Karl S. J., Jr.

RESEARCH IN RADIO FREQUENCY CAUTERY

The American College of Surgeons has undertaken research in cautery surgery, according to information at hand. Quoting the work of Byrne two generations ago, and his use of the actual cautery in the treatment of cancer of the cervix, it is thought, indicates that there is something specific in the removal of cancerous tissue by cautery that we do not get with the removal by knife. Apparently The College of Surgeons has never heard of our friend J. F. "Cautery" Percy and the wonderful work he is doing in furthering the work of Byrne, and the electrical instruments he has given to the profession for cautery purposes. To one who has followed Percy's work it seems marvelous, and one wonders that it has not obtained more general recognition.

The College of Surgeons is, however, following a different lead—the development of the radio frequency cautery which seems particularly useful in external lesions, such as breast tumors; and in brain and spinal cord surgery. An electro-surgical unit, which employs the higher radio frequencies for cautery dissection, with an attached electro-coagulator that effectively seals small vessels, has been offered by the manufacturer through the American College of Surgeons to a selected group of men to whom the machines are to be loaned, they to assist in making a comparison of this higher radio frequency cautery and other methods of treating surgical lesions.

Men fortunate enough to get the use of one of these units will agree to keep an accurate record of their findings and furnish a copy to the American College of Surgeons. The loan of the apparatus does not involve any obligation upon the surgeon or the hospital receiving the apparatus. The only interest of the College is in the scientific value of the research that may accrue.

Dr. J. E. Summers, Omaha, has had some experiences with its use several years ago and Cushing of Boston is said to commend it in brain surgery and Howard Kelley in gynecological surgery.

The University hospital is to have a machine and it is hoped that the physicians of the state having suitable, eligible, cases for its employ will send them in to the hospital.

THE FORTHCOMING ANNUAL MEETING

The annual meeting will be held at the Lincoln hotel, Lincoln, May 13, 14, 15. The program was not completed when the *Journal* went to press (April 20) so we are not able to present even a tentative program. The likelihood, however, is that by the time the May *Journal* is in the hands of the readers, the printed programs will also be available.

It may be taken for granted that the program will be of the first order, better than any previous ones, if effort counts, for the committee has been busy on the job for many months.

We are informed that the following out-of-state guest speakers will be present: Dr. E. S. Geist, Minneapolis, Orthopedic Surgeon; Dr. Frederick Christopher, Chicago, Surgeon; Dr. J. P. Greenhill, Chicago, Obstetrician; Dr. S. M. White, Minneapolis, Internist; Dr. R. B. Fenton, Portland, Ore., Otolaryngologist; Dr. J. A. Myers, Minneapolis, Internist.

We may confidently look for a record attendance at this meeting, for the Lincoln meetings are always unusually well attended, and with the numerous improved roads leading to the Capital city, every physician at all able to leave his business will want to attend.

AN OPPORTUNITY OVERLOOKED

For the past eighteen months the University hospital at Omaha has had sixteen beds available in a special psychiatric department where acute psychoses and psychoneuroses can be cared for with all the attending advantages of a general hospital. Not only are special laboratory and x-ray facilities and medical and surgical services at hand, but there has been provided a trained psychiatric nursing corps which is believed to be of equal importance with the medical service. Hydrotherapy, in the form of continuous baths and of wet packs, and the various kinds of light treatment, are parts of the physiotherapeutic equipment.

Occupational therapy is one of the most valued activities of the treatment given, and has proved in several instances, in the hands of the skilled psychiatric nurse, to be the determining influence in changing a morbid mental attitude into a healthy one.

A case in point is that of a young single woman, aged twenty-four, who had developed an acute catatonic stupor of six months' duration. She had been for three months in a general hospital receiving bed care at the hands of the hospital nurses. During this time she was mute, resistive, untidy and required spoon feeding. Her facial expression was puzzled and fearful. It was apparent that she was having active auditory hallucinations.

She was transferred to the University hospital and after a few days preliminary observation in bed, she was induced to get up and encourged to enter the daily routine of departmental activities. At first, and only with much difficulty, could she be gotten to fold gauze dressings, and in group calisthenics she would stand motionless in shrinking self absorption. She would often require a half hour's individual attention on the part of the nurse to secure a slight show of co-operation. Gradually, under constant urging and encouragement, her range of activities increased and a friendly emotional reaction replaced the previous one of fear and distrust. The auditory hallucinations disappeared as her activities developed and she left the hospital quite well three months after her admission.

This case is given to illustrate the importance of skilled psychiatric nursing care. It is believed that the nursing in this instance, was mainly responsible for the cure.

The psychiatric department of the University hospital was organized with three aims in view. These were: First, to provide practical teaching facilities in psychiatry for the medical college; second, to establish a psychiatric center where special problems in psychiatry might be studied with the advantage of University resources at hand; and third, to furnish the most modern and scientific forms of treatment possible for those psychiatric patients of the state who are eligible to admission.

The original plan provided thirty beds, fifteen for women and fifteen for men. Owing to insufficient appropriation, it has been possible to open the women's department only.

It has been the writers experience in talking with physicians from different parts of the state that these facilities for the treatment of acutely ill psychoneurotic and psychotic cases has been relatively unknown, and for that reason, the opportunity for hospitalization there of many deserving cases has been overlooked. It is to spread this information that this short article is written.

Physicians desiring to enter suitable and eligible cases of this type can do so by making application to the superintendent of the University hospital in the usual way.

—G. Alexander Young.

NATIONAL HOSPITAL DAY

Hospitals throughout the United States and Canada are beginning plans for the tenth observance of National Hospital Day, May 12, according to information reaching Dr. J. R. Morrow, superintendent, Bergen Pines, Oradell, N. J., chairman of the National Hospital Day Committee of the American Hospital Association.

While some institutions which have observed the day since its start are seeking new ideas, the majority of the hospitals will have "open house", reunion of babies, inspection of departments and other features which met with such success in previous years. Some of them undoubtedly have had the same experience as a hospital which decided to omit its "baby show" one year and found that the mothers, who had gathered in larger numbers than on the previous occasion, were greatly disappointed.

That more small hospitals will observe May 12 this year than in the past is the belief of some of the members of the National committee, owing to the tribute paid to small hospitals in rural sections by President Hoover in his endorsement of National Hospital Day.

Hospital councils in some cities focus all their attention at March and April meetings on plans for a joint observance of National Hospital Day. The Chicago Hospital Association is among those doing this at this time. This association, incidentally, already has been tendered time on two radio stations.

The national committee is in touch with large manufacturers and others using nation-wide radio hookups and hopes to extend the radio publicity given National Hospital Day last year. Many hospitals also are making arrangements for individual radio programs, as in the past.

Most of the hospitals conducting schools of nursing which will have a National Hospital Day program will give considerable attention to a presentation of facts about nursing education and nursing service, keeping in mind that May 12 is the anniversary of the birth of Florence Nightingale.

THE WHITE HOUSE CONFERENCE ON CHILD HEALTH

The White House Conference, soon to be held, comes as the consummation of the interest in children which President Hoover has had for many years, an interest manifested by his achievements in Europe, by his conspicuous work as Secretary of Commerce, when he stressed the fact that the producing strength of the nation depends upon the health of the people, by his administration of the American Child Health Association, and by his support of May Day—National Child Health Day.

The purpose of the White House Conference, as announced, is: To study the present status of the health and well-being of the children of the United States; to report what is being done for child health and protection; to recommend what ought to be done and how to do it.

The Conference has been divided by the Planning Committee into five sections, each subject to be studied in its relation to children's health and success: Medical Service, Public Health Service and Administration, Education and Training, The Handicapped Child (Prevention, Maintenance, Protection), and Public Relations. Its purpose is to gather all available information and scientific knowledge over the broadest possible field of child health and protection. Extensive research is not a part of the present activities of the Conference, it is stated, but where obvious gaps are present in the gathered information, programs of research may be suggested.

More than seven hundred experts are serving on committees of the White House Conference, which insures a thorough study of the entire field of child problems. It is probable that a second full meeting may be called in November of this year, for presentation of findings ready at that time.

Dear Reader:

The Journal and the Cooperative Medical Advertising Bureau of Chicago maintain a Service Department to answer inquiries from you about pharmaceuticals, surgical instruments and other manufactured products, such as soaps, clothing, automobiles, etc., which you may need in your home, office, sanitarium or hospital.

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Perhaps you want a certain kind of instrument which is not advertised in the Journal, and do not know where to secure it; or do not know where to obtain some automobile supplies you need. This Service Bureau will give you the information.

Whenever possible, the goods will be advertised in our pages; but if they are not, we urge you to ask the Journal about them, or write direct to the Cooperative Medical Advertising Bureau, 535 N. Dearborn St., Chicago, Illinois.

We want the Journal to serve you.

EDITORIAL PARAGRAPHS

At home you would not eat hollow radishes; at a hotel you do not get any other kind.

Golf is a game that makes a man who is too lazy to mow his lawn, work, when he thinks he is playing.

New ads this month: Postgraduate School of Laboratory Technique and Doctor's Residence and Equipment For Sale. Read the ads.

Twenty-five former presidents of the Nebraska State Medical Association are now living—enough to form quite a respectable group.

It is reported that a number of Omaha physicians have been experimenting with a just as good as the Coffey-Humber serum for the treatment of cancer.

Eminent members of the American College of Surgeons accepted an invitation to see the results of the Coffey-Humber treatment for cancer at San Francisco last month.

Basic science examinations will be given May 6-7 at the University of Nebraska College of Medicine, Omaha. Medical examinations will be given June 10-12, at the same place.

The Johnson county profession is organized 100% and the dues were paid in and transmitted to the State Association before April 1st, and the Dawson county society claims similar honors. Wish the entire state could do as well.

The editor would welcome the reactions of the readers to the several series of articles being published in the *Journal,* with particular reference to the Dermatological Clinics, Case Studies in Goiter, laboratory bulletins, etc. Editors need to get reactions occasionally.

The Third Annual Fortnight of the New York Academy of Medicine will be given October 20 to October 31, the theme being "Medical and Surgical Aspects of Acute Bacterial Infections". No fees will be charged and the profession generally is invited. This should appeal.

Dr. H. Winnett Orr, Lincoln orthopedic surgeon, appeared May 1-3 before the British Surgical Association at Bristol, England, by invitation to give an address on his special method of treating osteomyelitis. He was guest speaker at a meeting of surgeons at Detroit, March 25.

The Philadelphia County Medical Society has inaugurated a campaign to reduce the mortality in acute appendicitis, by the use of little stickers to be attached to statements sent out, as follows:

> In the presence of abdominal pain give nothing by mouth. Never give laxatives. Call your family physician. Apply an ice cap or hot water bottle. Abdominal pain which persists over a period of six hours is usually serious.
>
> This caution is published by the Philadelphia County Medical Society and endorsed by The Bureau of Health.

An international birthday celebration—something unique in history—was given in honor of Dr. William Henry Welch of Johns Hopkins University, "Dean of American medicine," on his 80th birthday, April 8. Dr. Welch has been one of the outstanding research workers in American medicine for a generation.

Readers will recall the case of a young Chicago lady who underwent a plastic operation at the hands of a Doctor Schireson to have her legs straightened, developed gangrene and suffered amputation of the limbs to save her life. It gives considerable satisfaction to be able to add that Schireson's license to practice in Illinois has been revoked.

Nebraska physicians, graduates of the Iowa University College of Medicine of some years ago will be grieved to learn of the death of Dr. James R. Guthrie, Dubuque, for some years professor of Obstetrics and Gynecology and dean of the medical school, of septicemia and broncho pneumonia, March 13, aged seventy-two years. Dr. Guthrie was a splendid teacher and one of the most lovable of men.

A new unit in medical organization has appeared, the Cheyenne-Kimball County Medical society. The *Journal* welcomes this new unit into the state organization. Hyphenated societies are desirable in parts of Nebraska and it would be well if we had more of them with a reasonable probability of functioning as local societies should function, than to have organizations for the sole purpose of paying dues, or to have counties wholly unorganized.

Seventeen hospitals in Nebraska are on the fully approved list of the American College of Surgeons as follows:

Alliance: St. Joseph's, 65; Beatrice: Lutheran, 97; Columbus: St. Mary's, 208; Falls City: Falls City, 34; Grand Island: St. Francis, 150; Lincoln: Bryan Memorial, 68; Lincoln General, 148; St. Elizabeth's, 225; Omaha: Bishop Clarkson Memorial, 90; Creighton Memorial St. Joseph, 500; Evangelical Covenant, 85; Immanuel, 120; Nebraska Methodist Episcopal, 225; St. Catherine's, 165; University of Nebraska, 255; Wise Memorial, 73; Scottsbluff: West Nebraska Methodist Episcopal, 65.

The United States Public Health Service says: "On account of the difficulty of definitely indentifying the germ of scarlet fever, it has thus far not proved feasible to determine the duration of communicability of scarlet fever by throat culture, as is done in the case of diphtheria. In the majority of instances, it is probable that uncomplicated cases of scarlet fever are no longer infectious in the fourth week of the attack." This is well worth remembering, particularly, when people beg to be released from quarantine.

James A. Hayne *Am. Jour. Public Health Oct.* 1929 *Vol. XIX* "Endemic Goiter and its Relation to Iodine Content of Food" states that it was found that when people who suffered with pernicious anemia were treated with liver, the iron and copper contained in the liver relieved the condition whereas iron and copper administered as inorganic salts did not have any effect. Beard and Myers at Western Reserve University treated rats with liver and found that they could relieve the pernicious anemia, whereas they could not relieve it by administering copper, manganese .and iron in inorganic salts.

It was found by Robsheit, Robbins and others that (parts per million)

	·Iron	Arsenic	Copper
Liver contained.........	58.5 p.p.m.	75.5	145
Kidney.............................	108.9	142.	101
Dried apricots............	48.4	181.3	144.5

Accidentally in feeding rats with dried apricots they obtained practically the same results as from the use of liver.

Reasoning from the above it was thought that perhaps the iodine contained in vegetables would be of great benefit in the treatment of goiter, and the experiments of Beard and Myers with rats seem to confirm this theory.

THIS MONTH IN MEDICAL HISTORY

May, 1930

Dr. Abraham Jacobi was born at Hartman, Westphalia, May 6, 1830. He graduated in medicine at Bonn and came to the U. S. in 1853. He became the Nestor of American pediatricians and lived until 1919.

May 8, 1775. It was ordered in the Continental Congress that the President pro tem, and Drs. Church, Taylor, Helten and Dinsmore examine candidates for medical military service. Dr. Benjamin Church was Director General of our first army hospital at a salary of $4.00 a day.

May 14, 1796. Jenner performed the first vaccination with a bit of virus from the hand of Sarah Newlme, a milk maid.

May 19, 1816. Delpech performed subcutaneous tenotomy for the first time. The object which he sought in doing the subcutaneous operation was to protect the divided tendon from the supposed injurious effects of contact with the air.

1730. Percival Pott, later one of the most celebrated English surgeons, was employed as an apprentice in Anatomy to Mr. Nourse, a surgeon at St. Bartholomew's Hospital, London. Mr. Nourse was one of the few engaged in giving anatomical lectures at that time, and Pott was only seventeen years old.

May 26-27, 1830. Earthquakes caused the death of 6,000 persons near Canton, China.

1830. In this year the Boston Society of Natural History was organized; the first locomotive was built by Peter Cooper; and the first telescope in the U. S. was set up at Yale University.

1880. The staphylococcus and streptococcus were isolated for the first time by Pasteur.

In 1830, James Syme (1799-1870) was lecturing on Surgery at the University of Edinburgh and was also engaged in writing "The Excision of Diseased Joints" published the following year. He described a method of making cloth waterproof—a process afterward patented by Macintosh.

1530. Otho Brunfels graduated in Medicine at Basel at the age of 65 and was city physician of Berne in 1533. In 1530 he published one of the first bibliographic medical lists known; it included a list of eminent medical men and their writings.

1830. The Gazette Medicale de Paris was founded by Dr. Jules Guerin. This journal was the successor of the Gazette de Sante, the oldest medical paper in France. It was established originally in 1773.

NECROLOGY

B. H. Clark, Ashland, Nebr.; University of Missouri School of Medicine, Columbia, Mo., 1880; member, Nebraska State Medical Association; practitioner at Ashland for about thirty years; died of organic heart disease, March 8, 1930, aged sixty-nine years. A widow and son, Dr. Eugene Clark, Burwell, survive.

Anthony Cauley, Humphrey, Nebr.; Creighton University College of Medicine, 1904; practitioner at Humphrey for 27 years; died March 24, 1930, after an illness of about eight months from carcinoma, aged about fifty-three years. A widow and two daughters survive. Dr. F. P. Cauley, Anthon, Iowa, is a brother.

Frank G. Salter, Pierce, Nebr.; Trinity Medical College, Toronto, 1889; practitioner at St. Paul, Nebr., from 1891 to 1897; at Norfolk in association with his brother, Dr. P. H. Salter, from 1897 to 1904, and for the last twenty-three years at Pierce; member, Nebraska State Medical Association; a former president of the Madison Five County Medical Society; sometime secretary, Elkhorn Valley Medical society; an able, conscientious and agreeable practitioner; died suddenly March 30, 1930, of an organic heart affection, aged sixty-two years. A son and daughter survive.

W. G. Rickard, Lincoln, Nebr.; Bennett Medical College, Chicago, 1905; member, Nebraska State Medical Association; for twenty-five years a practitioner at Lincoln; died April 1, 1930, of an organic heart affection, aged sixty-one years. A widow and son survive.

John B. Cargen, Cambridge, Wis.; College of Physicians and Surgeons, Keokuk, 1879; practitioner at Newman Grove, Nebr., from 1879 to about 1887, since then at Cambridge, Wis.; died March 3, 1930, following an illness of seven years, aged about eighty-one years.

J. C. Moore, Hollywood, Calif.; a member of the class of 1878 of the Medical School of the University of Michigan, but on account of illness did not graduate; College of Physicians and Surgeons, St. Louis, 1883; practitioner at Oakland, Nebr., from 1880 to 1890, when he located in Omaha where he continued in practice until 1921, when failing health prompted him to move to Hollywood, Calif.; one of the organizers of the Omaha Methodist hospital and a member of the staff while he lived in Omaha; former member, Nebraska State Medical Association; died February 5, 1930, aged about seventy-eight years. A widow and son, Dr. Clyde Moore, Omaha, survive.

PROGRAM FOR THE WOMAN'S AUXILIARY NEBRASKA STATE MEDICAL ASSOCIATION

Tuesday, May 13.

Registration—Lincoln Hotel.

Meeting of Board, 10 a. m.

3 p. m. Tea at Morrill Hall. Hostess, Woman's Auxiliary.

Wednesday, May 14.

Meeting of Woman's Auxiliary, 10 a. m.

Reports of County Presidents.

MRS. A. P. OVERGAARD
President, Woman's Auxiliary Nebraska State Medical Association.

Reports of Delegate to National meeting.

Reports of standing committees.

Adoption of revised constitution.

Election of officers.

Luncheon at Country club, 1 p. m., followed by address, Mrs. James Blake, Hopkins, Minn., National Finance chairman, outlining Health Education Program of the National Auxiliary.

Thursday, May 15.

Visit to State Capitol, a ride around city or golf at Lincoln Country club.

NEBRASKA ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

The Nebraska Academy of Ophthalmology and Otolaryngology will hold their annual meeting in Lincoln the night of May 12. Dr. Ralph A. Fenton of Portland Oregon will be the guest of honor. He will address the meeting on the subject, "Internasal Ethmoidal Surgery." Dr. Earl B. Brooks of Lincoln is president of this group, Dr. A. E. Gadbois of Norfolk is vice president and Dr. Clarence Rubendall of Omaha, secretary-treasurer.

AUXILIARY NOTES

The following officers of the Woman's Auxiliary Nebraska State Medical Association were guests of the Second District Federation of Woman's Clubs at Gretna, April 3: Mrs. A. P. Overgaard, president; Mrs. C. C. Tomlinson, secretary; Mrs. Clyde A. Roeder, publicity chairman; Mrs. Clarence Rubendall, historian.

The second Study Program for County Auxiliaries provided by the National Auxiliary is on the subject of the County Health Unit, a name given to a full-time county health department, consisting of a health director, one or more nurses, a clerk, when possible one or more sanitary officers, and sometimes a laboratory worker. All these work in the county under the supervision and guidance of the State Health Department. The unit is frequently financed jointly, at least during the first years, by the county, the State Health Department, the United States Public Health Service and the Rockefeller Foundation.

In 1900, from the health standpoint, rural life was safer than city life. By 1927, city life was becoming safer than rural life. Statistics compiled by the U. S. Public Health Service called attention to the fact that standard of living and present-day health practices in our cities are lacking in the rural sections of the country. Over 77 per cent of our rural population is as yet unprovided with official local health service.

Because they have learned that personal contact of local workers is far more effective than long distance educational methods, state health departments are now organizing for the purpose of helping the counties of the state to establish their own local health departments. County Health Units which have been in operation three or more years demonstrate definitely that such diseases as scarlet fever, diphtheria and smallpox have been reduced as much as 75 to 95 per cent.

Up to November 20, 1929, thirty-five states had county health organizations, totaling 481 full-time county health units. Alabama heads the list with 51. Nebraska has none. Dr. P. H. Bartholomew, Director of Public Health, has made the following statement: "It would seem that the Woman's Auxiliary of the State Medical Association can be of considerable service if they, as an organization, will endorse and work toward the establishment of County Health Units in Nebraska".

It is necessary to create a sentiment for appropriations by County Boards for Public Health Nursing Service. Free public health nursing is a logical sequence of free public school education. A sound body is essential to a sound mind.

President Hoover's message to the 71st Congress includes a clear statement of the value of Public Health Units.

UNITED STATES CIVIL SERVICE EXAMINATIONS

The United States Civil Service Commission announces the following open competitive examinations:

Senior Medical Technician, $2,000 a Year.
Medical Technician, $1,620 a Year.
(a) Bacteriology.
(b) Roentgenology.

Applications for senior medical technician and medical technician must be on file with the Civil Service Commission at Washington, D. C., not later than May 7, 1930.

The examinations are to fill vacancies in the positions of laboratorian and assistant laboratorian in the United States Veterans' Bureau, and in positions requiring similar qualifications.

The entrance salaries are $2,000 a year for senior medical technician, and $1,620 a year for medical technician. Higher-salaried positions are filled through promotion.

Competitors will not be required to report for examination at any place, but will be rated on their education and training, and on their experience.

Medical Officer.
Associate Medical Officer.
Assistant Medical Officer.

Applications for the above-named positions will be rated as received by the Civil Service Commission at Washington, D. C., until June 30, 1930.

The examinations are to fill vacancies in hospitals of the Veterans' Bureau, the Public Health Service, the Indian Service, and in other establishments of the Federal classified service throughout the United States.

Competitors will not be required to report for examination at any place, but will be rated on their education, training, and experience.

Full information may be obtained from the United States Civil Service Commission at Washington, D. C., or the Secretary of the United States Civil Service Board of Examiners at the post office or customhouse in any city.

THE SOCIETIES

A regular meeting of the **Lancaster County Medical Society** was held, March 4, 1930, the President Dr. George H. Walker presiding.

The first paper of the evening was by Dr. B. L. Hooper on "Vertical Maxillo-Mandibular Relationship." Dr. Hooper presented in a clear scientific discussion the importance of maintaining this relationship of upper and lower jaws in the edentulous mouth. He pointed out the importance of mastication, the chief factor being the power of the muscles which is only exerted completely when this relationship is maintained properly. The importance in facial expression he illustrated very graphically by lantern slides, and showed how it is possible to obtain the proper relationship by profile pictures taken before the teeth are extracted. He also pointed out the importance of continued care by the dentist to correct this relationship by building up the dentures as the alveolar processes are absorbed.

The second paper of the evening was read by Dr. C. H. Arnold on "Blood Transfusion". He gave a very interesting review of the history of the procedure, of the development of blood grouping, and of the development of methods. He stated that whole blood is now generally used in preference to citrated blood.

He gave in considerable detail the indications for transfusion, naming the various types of anemia, shock hemorrhage, and sepsis particularly. The indications are broad and the procedure simple and safe. Whenever there is any doubt about the indication it should be employed, rather than put off.

The doctor discussed at some length the value of the procedure aside from the replacement of red cells and hemoglobin, mentioning particularly the value of opsonins and other immune bodies. He stated that he believes that in sepsis transfusion is of great aid, even though it may not effect a cure in many cases.

The paper was variously discussed by Drs. Flansburg, Covey, Wiedman, Wagner, Lehnhoff, Taylor, Arnold and Whitham, most of whom commended the essayist's enthusiasm in the use of transfusion.

The third paper of the evening was read by Dr. George Covey on "Coronary Thrombosis." In the beginning the author said that the disease was not predictable by the condition of other parts of the arterial tree. He also stated that the apparent increase in its incidence may be due to its better recognition. He outlined the history of the knowledge of the condition and described the coronary vessels in some detail, stating that the most common site for a constricting ring is in first portion of the descending branch of the left coronary artery.

He described the pathology of the condition, outlining the stages in the scar formation in the heart muscle as a result of occlusion of the arterioles. He quoted Herrick's description of the typical picture and outlined the symptoms in a number of cases. Finally a number of specimens from the Lancaster County Medical Society Museum were shown.

The paper was discussed by Drs. Thompson, Lehnhoff, Waite and Owen.

A motion was made by Dr. Hompes and seconded that a committee be appointed to draw up resolutions suitable to the occasion of the death of Dr. Dayton. Carried. Drs. Cook, Mitchell and Wilson named.

On March 18, 1930, Dr. C. P. Jeans of Iowa City, Iowa, was the guest of the **Lancaster County Medical Society.** He was entertained at dinner at the University Club by fifteen members and later addressed the Society on "Hereditary Syphilis". He was introduced by the president, Dr. George H. Walker.

Dr. Jean's paper was a lantern slide talk based on an intensive study of over 700 cases. He first discussed the frequency of the disease and stated that it formed a very small part of the total number of cases passing through a pediatric clinic. The incidence decreased from man to woman to child, so that although from 10% to 20% of males in the lower strata of society are infected, less than 2% of the children show evidence of inherited disease. The mode of transmission is now thought to be by way of the semen which carries the spirochaetes to the endometrium, whence the child is infected. The mother is always infected though the infection is usually latent. Most mothers of syphilitic children give no history of a primary lesion.

The pathology of congenital syphilis is the same as that of acquired and the difference in clinical manifestations is due only to the fact that the host is different. The lesions are also the same, except that the primary state is not present and the secondary lesions are more severe. He divided the cases into two groups, those under two years and those from two years to puberty. The lesions of the first group are secondary and late secondary, the most frequent being rhinitis and rash. Less common is osteo-chondritis (so-called epiphysitis). In the older group the lesions are late secondary and tertiary. The most frequent lesion in this group is keratitis.

Dr. Jeans threw some doubt on a few of our traditional ideas. For instance, he stated that Hutchinson's trial seldom occurred, the limiting factor being deafness, which was extremely rare and when present is always associated with cerebro-spinal involvement. The regular progression of still birth, syphilitic child, and normal child is also very rare.

In discussing the Wassermann test the speaker made some positive statements which are worth repeating. He stated that the test is more reliable in the child than in the adult; that a positive test after two months means syphilis; that a negative before two months frequently becomes positive; that a positive mother may cause the child to show a weakly positive test which in the absence of infection becomes negative by two months. In his experience, cord blood Wassermanns are very unreliable. In his series of cases, 25% of the mothers and 50% of the fathers had negative Wasserman's, though all had probably been positive at some time.

The prognosis, according to Dr. Jeans, is quite favorable if treatment can be started early and continued for at least six months. He did not discuss treatment except to say that it was exactly the same as in the adult. He uses arsenic, mercury and bismuth according to circumstances and indications.

In answer to a question, regarding his criteria of cure he stated that when a child was clinically and serologically negative for one year without treatment he could be considered cured.

—Roy H. Whitham, Secretary.

Upward of seventy physicians and their ladies attended the meeting of the **Madison Five Counties Medical Society** at the Hotel Norfolk, Norfolk, March 25, following a dinner.

Dr. L. L. Nelson presented a number of cases of evisceration of the eye by modifications of the Mule method and by the Gifford method, showing cosmetic results after fitting with artificial eyes. The area of motion favored the Gifford method.

Dr. J. M. Patton, Omaha, spoke on "Ocular Manifestations in Systemic Disease", bringing out many points, notably that so-called hysterical blindness may mean a brain tumor or a pituitary cyst and that an apparently innocent ocular cellulitis may be caused by a cavernous sinus thrombosis which is always fatal.

Dr. J. M. Potts, Omaha, spoke on "Nose and Throat As Foci in General Disease". He recalled the experimental work on focal infection in passing, said all tonsils are infected and that contrary to the lay belief that large tonsils are trouble makers, the smaller and buried tonsils harbor and spread the infection more readily. He showed a number of slides of the sinuses and dwelt on the necessity of precision of position to get good plates.

The business session considered a proposed new fee schedule which brought out animated debate and lasted until after midnight, showing the intense interest in the commercial side of medicine and helping to pave the way for State Medicine which is in the offing!

The **Ninth Councilor District Medical Society** meeting was held at Ravenna, March 19, with the following program:

Scientific program—1:30 p. m.

"Surgery", Wm. Jepson, M. D., Sioux City, Ia. Discussion by O. Grothan, M. D., St. Paul, and C. J. Miller, M. D., Ord.

"Diet and Nutrition", A. D. Dunn, M. D., Omaha. Discussion opened by T. H. Koefoot, M. D., Broken Bow.

"Management of Meningitis", A. E. Bennett, M. D., Omaha. Duscussion opened by E. E. Farnsworth, Grand Island.

"Early Diagnosis and Management of Early Tuberculosis", L. T. Sidwell, M. D., State Hospital for Tuberculosis, Kearney, Nebr. Discussion opened by J. E. Olsson, M. D., Lexington, Nebr.

"Epidemology", P. H. Bartholomew, M. D., Collab, Epidem'st USPHS, Lincoln, Nebr. Open discussion.

At six o'clock Drs. Sidwell and Bartholomew broadcast over KGFW and at 6:30 a dinner was served at the Congregational church after which the business meeting was held.

The **Clay County Medical Society** met in the Court House in Clay Center, Nebraska, Monday, March 17th, 1930. Dr. L. C. Knight, of Lincoln, Nebraska, was present and read a very interesting paper, "General Practice of Otolaryngology".

The following officers were elected: Pres., Dr. J. G. Stone; secretary-treasurer, Dr. J. O. Latta; delegate, Dr. C. W. Keith.

The **Richardson County Medical Society** met March 20 at the Hotel Weaver for 6:30 dinner, followed by the regular monthly meeting. Dr. A. F. Ross of Sabetha, Kan., gave a talk on "Medical Licenses". Dr. Wm. Shepherd of Rulo read an article on "The Control of Radio Lectures in the State of New York, Pertaining to Fakes and Frauds in Medicine."

A New England roast turkey dinner with all the "fixins" that go with it featured the meeting of the **Dawson County Medical Society**, April 4.

Dr. A. L. Smith of Lincoln was the guest of honor and gave a lecture, illustrated by lantern slides, on "Tachycardia". Indications are that this is one of the best, small, county societies.

The **Thayer County Medical Society** held its regular meeting at Hebron, April 10th, with the president, Dr. F. A. Mountford, presiding. Following a six o'clock dinner at the Central Hotel, the society adjourned to the Court House. Dr. L. C. Knight of Lincoln read a paper on "Otolaryngology for the General Practitioner", and Dr. E. E. Angle of Lincoln presented the topic "Making a Urological Examination". Both papers were well received and elicited a lively and interesting discussion. Fifteen physicians were present.

—Rudolph F. Decker, Sec'y.

HUMAN INTEREST TALES

Wood Lake is advertising for a physician.

Dr. T. L. Havlicek has located at Creighton.

Dr. R. T. Jones has moved from Elba to Gibbon.

Dr. F. W. Faulk has moved from Peru to Hershey.

Dr. A. T. Robertson, has moved from Du Bois to Madrid.

Dr. and Mrs. F. W. Neihaus, Omaha, have returned from Europe.

Dr. R. D. Balcom, formerly of Genoa, has moved to Las Vegas, Nevada.

Dr. Raymond Rice, Omaha, was acquitted of a charge of illegal sale of narcotics.

A building costing $100,000 is being erected at the Norfolk State Hospital at this time.

Dr. A. J. Callagan, for a time in practice at Snyder and Ashton, has located at Columbus.

Dr. F. H. Kucera, Verdigre, who has been ill for some months, is reported convalescent.

The profession will sympathize with Dr. J. J. Bruce, Madison, in the loss of his father recently.

Dr. and Mrs. C. W. Slagle, Alliance, have returned from a trip to the Mediterranean and Egypt.

Dr. L. D. Rider, Glenvil, has gone to Washington to take a position with the Veterans' Bureau.

M. E. Lewis, an Indian medicine man of Columbus, was fined for practicing medicine without a license.

Dr. E. E. Clark, formerly of Burwell, has moved to Ashland in succession to his father, the late Dr. B. H. Clark.

It is reported that Dr. F. G. Kolouch, Schuyler, and Dr. V. L. Siman, Winside, have, each, invested in aeroplanes.

The "Buffalo Bill" Cody home at North Platte has passed into possession of Dr. Charles F. Heider, North Platte physician.

Dr. W. F. Johnson, former practitioner of Walthill, but more recently located at Lincoln, has again located at the former place.

A malpractice suit against Dr. E. R. Porter, Omaha, in which an award of $15,000 was made in the lower court, was affirmed by the supreme court.

Dr. P. H. Salter, Norfolk, has recovered from an auto accident incurred early in March, by which he suffered a broken clavicle and serious muscular injuries.

Dr. and Mrs. G. W. Renecker and Dr. and Mrs. R. G. Henderson, Falls City, have returned from a trip to the Rio Grande valley and short excursions into Old Mexico.

Dr. J. E. Dunn, Arnold, has been named as executor and residuary legatee of the estate of a grateful patient, the residuary portion being estimated as from $60,000 to $70,000.

The West Point clinic now claims a place in the sun. It is the creation of Drs. J. J. Kieffer, A. W. Anderson, F. J. Kotler and Carey. Seventeen rooms are devoted to it.

Dr. V. M. Winkle has become associated with Dr. A. M. Sonneland, Norfolk. It is understood that Dr. Sonneland will early in summer depart for Europe for a period of study.

Dr. D. R. Rogers, Ragan, recently celebrated the fiftieth anniversary of his graduation at Jefferson Medical College, Philadelphia. He has been in practice at Ragan forty-six years.

Dr. W. N. Anderson, well known Omaha internist, has moved to Los Angeles. It is reported that he and Dr. Leroy Crummer will again be associated in practice as they were in Omaha.

The Medical Women of Lincoln gave a dinner, March 3, to Dr. May Ting, a Chinese lady who graduated from Ann Arbor in 1920 and after postgraduate work and an interneship has conducted a hospital at Teintsin since 1922. She is in this country now, taking postgraduate work in pediatrics. She reports that Chinese doctors with modern training are increasing rapidly.

BOOKS RECEIVED

TREATMENT OF SKIN DISEASE—IN DETAIL, by Noxon Toomey, M. D., F. A. C. P., St. Louis, 512 pages, large octavo. Price $7.50. Published by Lister Medical Press, St. Louis, 1930.

Bulletin of the National Research Council, Number 73, A SURVEY OF THE LAW CONCERNING DEAD HUMAN BODIES, by George H. Weimann. Published by the National Research Council at Washington, D. C., 1929, 8 mo., 199 pages.

THE NORMAL DIET, by W. D. Sansum, M. S., M. D., F. A. C. P., Director of the Potter Metabolic Clinic, Santa Barbara Cottage Hospital, Santa Barbara, California. 134 pages, 18 mo., cloth cover. Published by the C. V. Mosby Co., St. Louis. Price $1.50.

CANCER OF THE BREAST, by William Crawford White, M. D., F. A. C. S., 8 mo., 221 pages, cloth, published by Harper Bros., New York. Price $3.00.

UTERINE TUMORS, by Charles C. Norris, M. D., 8 mo., 251 pages, cloth, published by Harper Bros., New York. Price $3.00.

OUCH!

A robust woman lost her thumb in a trolley accident.

"But why," asked the company's attorney, "do you think that your thumb is worth $20,000?"

"Because," she replied, "it was the thumb I kept my husband under."

COMMENTS ON TREATMENT OF HEART DISEASE

James B. Herrick, Chicago (*Journal A. M. A.*, Dec. 8, 1928), says: The great majority of heart cases are treated along these lines: Rest to permit recovery of muscular tone and to prevent overstrain of an injured organ. Digitalis to slow conductivity and heart rate and thus secure more rest, together with more vigorous ventricular contractions and more normal output of blood with each beat. Opium to relieve pain, induce sleep and lessen nerve strain. A laxative for purposes of elimination. There are occasional misapplications of the general principles. Consider the subject of rest. Fixed rules cannot and should not be laid down. There seems to be a wide difference in the practice of different physicians. Some prescribe too little rest for acute inflammation of the heart and for serious breakdown of a chronically diseased heart and, on the other hand, too much rest for milder grades of cardiac insufficiency and especially for cardiac disease with no evidence of present or impending breakdown. In general, an acute carditis demands rest until the temperature and pulse are normal and until moderate exercise does not cause the temperature to rise, the pulse to show undue irritability, or dyspnea to make its appearance. The patient with failing heart, whether from primary chronic valvular or myocardial lesion, needs rest long after his more urgent symptoms have disappeared. A too early resumption of work will promptly cause another breakdown. However, many physicians need to have removed the bugbear fear of exertion. It is not a new thought that the heart muscle after the subsidence of the acuter symptoms may, like skeletal muscles, need exercise; that what is needed in many instances is not less, but more exercise. Patients must be told that a rheumatic heart or a leaky valve does not necessarily imply a life of inactivity and idleness. Individualization is the key to this feature of treatment. There is a too strong tendency to impose on the profession arbitrary rules as to the use of this digitalis, rules that are in part contradicted by the every day results of bedside practice. The fact that so many physicians successfully prescribe digitalis without thought of cat units, accurate body weight, or rate of elimination; that they use it in conditions other than auricular fibrillation; that they do not refrain in an urgent situation from giving it subcutaneously, intramuscularly or intravenously; that they very rarely feel compelled to give the massive dose in order to get the prompt effect, all this is a protest—an unconscious one, to be sure—against the too dogmatic directions that have been given publicity, directions that are perhaps too much based on laboratory experiment, with too little control by extensive bedside observation. The greatest fault, however, is the giving of digitalis without any indication for its use except the diagnosis of heart disease— and this diagnosis sometimes wrong. Ignorance, haste, carelessness, indifference, too great reliance on the roentgen ray or electrocardiograph will explain many cases. But often, Herrick believes, it is to be explained by the fact that the physician has heard from a teacher, or he has read in the medical journal that the early diagnosis of heart disease is the great desideratum. But he has not read of the errors in the diagnosis of heart disease. The mistage of diagnosing wrongly may lead to direful consequences, unnecessary fear, lives of inactivity, enormous economic loss. Again, when there is some real cardiac disturbance the greatest care is necessary not to convey a wrong impression. The impression of a disease is destined to advance relentlessly toward an early death. There is a danger not fully recognized that the movement for periodic health examinations will, unless most carefully watched, make people too introspective, too apprehensive. Unless the examinations are made by competent men, who understand human nature as well as disease and how to recognize it, greater harm than good may come. So, too, heart associations must guard against fostering needless fear of heart disease by paying too much attention to slight cardiac disturbances and unduly stressing the importance of early recognition of heart disease. The history, observation, physical examination, laboratory tests and instruments of precision must all be given a place in the treatment of heart disease. Even psychology has a definite function.

THORACIC AND LUMBAR SYMPATHETIC GANGLIONECTOMY IN PERIPHERAL VASCULAR DISEASES

Sympathetic ganglionectomy and trunk resection is a surgical procedure of considerable magnitude which Alfred W. Adson and George E. Brown, Rochester, Minn. (*Journal A. M. A.*, Jan. 25, 1930), find they are justified in using in the treatment of advanced cases of Raynaud's disease, in the early developing vasospastic cases of scleroderma and in cases of throbo-angiitis obliterans in which vasospasm of the collateral arteries exists. The operation is probably indicated in allied and borderline cases but should be employed with caution, for the procedure is not a cure-all for all peripheral vascular diseases.

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HIGH COST OF MEDICAL CARE AND STATE MEDICINE*

K. S. J. HOHLEN, M. D., F. A. C. S.,
President, Nebraska State Medical Association,
Lincoln, Nebr.

It is very difficult to address an audience such as this one upon a topic that is of interest to all. In the past we have heard addresses on various subjects, but I believe the majority have been on some phase of history of medicine. Tonight I will attempt to discuss in a casual manner, a subject that should be of equal interest to the Doctor, his wife or children.

Today we are confronted on all sides by discussions by all classes, groups and types of people on the high cost of medical care, usually with the inference that the medical profession as individuals and as a class are at fault. These discussions usually terminate with the idea and threat that State Medicine is the remedy.

What is "State Medicine"? From an article in the *A. M. A. Bulletin* of January, 1928, by Dr. Louis R. Effler, I quote the following definition which I think is a good one. He states, "State Medicine may be defined as referring to the extension of governmental activity in the health field by creating compulsory health insurance, or free and pay clinics, or distributing physicians, or seeking complete control of medical practice as a public utility."

In three countries, to my knowledge, a form of State Medicine is in force. Namely, in England, The National Health Insurance Act of 1911, which is better known in America as the "Panel System." It provides that every person with an income below 250 pounds (approximately $1,200) must carry health insurance with the government. The doctors who have undertaken to treat the insured are called the "Panel".

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*Presidential Address delivered before the Nebraska State Medical Association, annual meeting, Lincoln, Nebr., May 14, 1930.

In Germany and Austria similar laws are in effect. In Austria the Law is known as "The Employed Insurance Law", and provides for sickness, unemployment, accident, pension and even burial. By the lay people it is called the *"Kranken Kasse"*. The physicians accepting this service are called *"Vertrags Arzte"*, or "Contract Physicians".

Now the question arises, are the physicians of this country willing that the Government should take control of all health matters, a form of State Medicine? Let me read you an article coming from Riga, January 25 of this year and printed in the *Chicago Tribune* with the heading "Russia to Force All Doctors to Work for State":

> "The private practice of medicine is to be forbidden by a decree which the soviet commissariat of health has submitted to the committee of the Communist party for approval. Physicians and surgeons operating private clinics must surrender their property and enter state employment, while medicos already on the state payroll are forbidden to receive patients in their homes. The commissariat has proposed to transfer medical men by force to provincial towns which have been without assistance since the 1917 revolution."

I am aware that there are some physicians who are favorably inclined to State Medicine; whereas I believe the vast majority would look with great disfavor upon State Medicine. It certainly would be a treat to the Communists in Russia and certain other foreign countries, to see such a dispatch as eminated from Russia, going abroad from this country.

Are we as physicians facing this danger? Personally, I believe we are. There are indications on all sides that we are getting very close to State Medicine. In our own state, not much over a year ago, when your Representatives were meeting with a commission appointed by the State, and representatives of manufacturers and labor, to consider our compensation laws, the threat was made to the medical profession that if we didn't agree, the interested parties would seek legislation for State Medicine. Furthermore, on every hand there are lay people who wish to do good, which is a commendable undertaking, who are usurping duties and administrative functions that rightfully belong to the medical profession. Take for instance the following that are in a sense a beginning effort in that direction:

1. Our lay organizations, local, state, national, charity, or pay, under the guise of various names, that are pretending to look after the welfare of many of the sick and afflicted from the time of birth to death.

2. State activities, such as Compensation administration and commissions, hospitals for tubercular, insane, crippled children, feeble-minded, State and Federal venereal clinics, establishment of State laboratories, Public Welfare, Child Hygiene, School Clinics, etc.

3. Many national activities. Such as The Shepard-Towner Act, which is now ended but which under several other names is sought to be revived by certain Bills before Congress. The World War Veterans Act of 1924, which provides for privilege of hospitalization, medical and surgical care to all veterans of all wars since 1897, thereby it is estimated, affecting over 4,000,000 men.

4. A number of public clinics that have been established by philanthropic persons for the benefit of those that can pay nominal fees. Such an example we have in Chicago.

5. We even have national and state legislation as to what you may prescribe. For example, our Volstead Act. In some states you may prescribe a pint of *Spiritus Frumenti* per day, but in our state you are not permitted to prescribe any.

Now let us consider the cause, or in technical medical language, the etiology that underlies all this talk of State Medicine. In doing so, we must do so from the standpoint of those concerned.

1. The patients, or the lay public.

2. Physicians, or really the medical profession.

3. The State.

1. Why does blame lie with the layman or patient?

I believe a prime cause is the fact that he does not realize that in planning for, or thinking of the future for himself or his family, that at any moment sickness or injury may befall them, and that nothing has been provided in the family budget to pay for this emergency. His education in health matters has been sadly neglected. Who is to blame?

The general public seems to be totally ignorant of the old adage that "Health is Wealth", and seem to have substituted "Automobiles, Clothes and Radios Indicate Wealth", even though most of these things are bought on the installment plan. It used to be in the years gone by that the baby was paid for by this plan, but now the baby has to take a back seat for other luxuries and often is not paid for at all.

You are all aware that the average earner's wage is usually divided so that it covers the ordinary needs of life such as groceries, etc., the installments that are due on the furniture, fur coat, radio, or automobile; but nothing is set aside for the emergency of sickness or injury. Just lately I saw an advertisement of an automobile concern which set forth, that 93% of the automobiles sold were sold on the installment plan. Merchants everywhere are encouraging buying on the installment plan, under the assumption that it is a good thing for business. And when the crisis of sickness or injury comes, there are no resources for medical care and the final act is always the Bankruptcy Law which gives absolution, and the doctor is the loser.

2. What part do we as physicians play in the cause of the discussion at hand?

I will say in advance that we play a larger part than we realize. Not from the fact that in general our fees are too high, because it has been indicated by some of those studying this question that the cost of medical care has not increased proportionately as much as commodities, labor, etc. However, there are exceptions to all rules and there is no question that in a number of instances there have been physicians who by their greed have charged fees that were outrageous, plain robbery and wholly out of proportion to the patient's means, or the services rendered, thus creating an enemy of the medical profession in general. In this respect it would behoove us all to remember the "Golden Rule".

I believe that probably one of the greatest factors from the standpoint of the physician has been that he has not applied sound business principles to the practice of medicine. The honorable code of ethics and the traditions that have been handed down from the past, are partially responsible for this. Under ethics, you must not do this or that, and under traditions, "it is unprofessional and below the dignity of the medical profession". It is time that we wake up. You will agree with me that there are in proportion as many honorable and ethical business men as there are doctors. The successful business man is generally a "square shooter".

The physician has been negligent in making just charges and has hesitated to collect his dues, thus pauperizing his patients and making "dead beats" of them. They have thus failed to educate them to the fact that they must pay for their medical services just as well and promptly as they do for the other necessities of life.

I believe the great trend and desire for every physician to become a specialist is another factor that has its influence upon this question. Specialization carried to the extreme is a menace. At the present time any physician who desires to become a specialist can do so without much trouble or preparation, and I maintain that the improperly trained specialist is a menace to society and a factor in the high cost of medical care. It is true that our young men are preparing themselves to become specialists after graduating from medical school, by internships, special work and the like, and, of course, usually locate in the city; but in spite of the most wonderful training, is he a competent specialist? I say, he is not. I believe that every young physician, after serving his internship, should serve as a general practitioner for at least five years. Why? It would give him an insight to all phases in the practice of medicine from the economic as well as from the medical side, and incidentally also teach him the human side of the question and that common sense is of great value. After these five years, should he so desire, let him prepare himself for a specialty. There is no question in my mind that over-creation of specialists has been a factor in the unrest now at hand. The desire of the so-called specialist to get the business has been at the bottom of some exorbitant fees that have been collected. This may have been partially because of need, or perhaps some one had his hand out expecting part of the fee. Personally, I would favor the control of specialization under a legislative act. This would also solve the problem of shortage of physicians in rural communities, and in several ways be factors in reduction of cost of medical care. Certainly that would be better than being forced to go to some community under State Medicine as they are doing in Russia.

I believe another factor that has played an important part in causing dissatisfaction in the minds of the public has been the relationship of one physician toward another. Often criticism or an unkind word has resulted in casting doubt in the patient's mind, causing him to wander from one physician to another. Related to this has been the sad spectacle of commercially minded physicians contradicting each other before the courts, especially in compensation cases, personal damage suits, will cases, etc., which have resulted in a loss of confidence in the medical profession.

3. How does the State enter into discussion of high cost of medical care?

The State has been negligent through its legislative bodies insofar that it did not enact proper legislation to protect its people, causing the expenditures of vast sums without results. Among examples may be cited:

1. Improper quarantine regulations, and thereby spreading disease. The average State spends comparatively little for protection of its people, in comparison to what it spends to safeguard its cattle, hogs, etc. Why? More legislators are interested in domestic farm animals than in human beings.

2. The inability to enact laws through its legislative bodies, to protect the people from quacks, cults, patent medicines, etc. The State has been very lax in that it does not have proper or sufficient regulations to control those who wish to practice the healing art.

In this respect the physician has been somewhat at fault and must share part of the blame with the State, because he has not been a good citizen. That is, he did not exercise his right to participate, in being interested in politics or legislation, in doing his duty, as every good citizen should, and exercise his franchise at the polls. You will note that the legal profession is well represented and protected in a legislative way, and this, because of their interest in politics as a class.

I realize, of course, that much could be added to the foregoing as a causative factor in producing the high cost of medical care. For instance, modern hospital standardization with its up-todate equipment, etc., high standards of medical and nursing education, thereby making better doctors and nurses at greater expense, etc.

Recently in conversation with medical men in Germany and Austria, I found a general dissatisfaction with the *"Kranken-kassen"* system in vogue there. In these countries much has been written in their journals and many discussions held in their societies upon this subject. Even in talking to lay men dissatisfaction was expressed and abuses cited as occurring under this form of practice. In England I understand the same condition exists, and I take the liberty of quoting the following from the foregoing mentioned *Bulletin of the A. M. A.*:

"More than fifteen million people are compulsorily insured in the British Isles, and after fourteen years of unhappy experience, both patients and doctors find the system very unsatisfactory. Some of the reasons for the failure of state medicine in England are:"

1. "It is an enormous expense to the Government."

2. "It encourages perfunctory, inferior service and inadequate medical treatment. The doctor receives compensation whether his services are good, bad or indifferent."

3. "It develops large numbers of neurotics who run to the doctor with every conceivable ailment, whether real or imaginary. It encourages costly malingering."

4. "Public dissatisfaction has resulted in an enormous increase of quackery and cultism."

5. "The people lose the right to select their own doctor." (This one item should condemn state medicine for the United States.)

6. "It undermines medical initiative, does not recognize merit, forgets the stimulation of medical research and tends to paralyze medical progress."

7. "It discourages the ambitious youth from the study of medicine and leaves the field to men of inferior talent."

"In America, we cannot afford to retard the progress of medical knowledge by government control. A scheme, such as the "Panel System" is full of restrictions, swamped with intolerable "red tape" and graft. We dare not undermine the morale of the forces fighting against disease by placing the control of the sick in the hands of the politicians. Public health must not be used as a pawn in a political game. Any system that will standardize sick people into herds and classes is a perilous experiment, inimical to public welfare."

THE DISEASED GALLBLADDER*

B. B. DAVIS, M. D., F. A. C. S.,
Omaha, Nebr.

The loose manner in which the gallbladder is connected with the liver gives basis for a suspicion that it was an afterthought and reminds one of an old house whose owner has had equipped with open plumbing. The gallbladder has its own circulation, nerve supply and lymphatics independent of the liver. Strangely the cholecystic veins, instead of emptying into the hepatic vein, which would seem the natural course, drain into the portal vein, and thus directly to the liver, and this has aroused a suspicion that the gallbladder produces a hormone which activates the liver functions.

For a clear understanding of gallbladder pathology there is a crying need for more knowledge of its physiology. Three, four and five decades ago we looked upon the gallbladder as a simple reservoir in which the bile is stored between the periods of active digestion. The muscular contraction when food is taken was supposed to be analogous to the phenomenon by which the urinary bladder is emptied.

This contented the physiologists until the surgeons invaded the field. They soon began to question the active emptying of the viscus because it was never found empty and they never saw it contract. Even the faintest peristalsis was lacking. Its value as a storehouse for bile was also questioned on the ground of its inadequacy. A reservoir with a normal capacity of only one to one and one-half ounces seemed very small when the total output of bile is thirty to fifty ounces in twenty-four hours.

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*Read before the Omaha-Douglas County Medical Meeting, Sept. 24, 1929.

Thus the accuracy of most of the physiologists most cherished conclusions was challenged. For a time we became nihilists. For several years the gallbladder was supposed to be functionless, having no more value than the appendix.

It had never occurred to anyone that the high graceful delicate waving tufts of villi of the gallbladder mucous membrane would not have been there if the sole function was to act as a passive diverticulum of the biliary ducts. The energies of a group of active and progressive physiologists now began to face the problem seriously and it was not long before the epoch-making discovery was made that a most important function of this mucous membrane was the rapid absorption of the watery elements of the bile leaving the solid constituents behind. Concentration of bile in the gallbladder is now a well proven phenomenon. It has been shown that concentration is capable of reducing ten volumes of liver bile to one volume of the condensed product. Thus can a gallbladder of one and one-half ounces cubic capacity contain enough concentrated bile to equal fifteen ounces of bile as normally secreted by the liver, making the viscus truly a reservoir capable of storing all the bile secreted between meals.

After relinquishing the idea that the gallbladder empties by a vigorous expulsive effort many theories were evolved to explain the phenomenon of emptying. Changes of intra-abdominal pressure due to the rhythmic raising and lowering of the diaphragm during respiration, distention of the stomach after a meal, relaxation of the sphincter of Oddi, and the vigorous peristalsis of the duodenum during digestion acting like a suction pump to draw the bile into its lumen were offered as explanations, but all of them seemed like mere makeshifts and did not satisfy the logical mind. Meltzer's theory of contra-innervation based on the hypothesis that when the sphincter Oddi relaxes the gallbladder contracts seemed more reasonable. The truth of this theory has lately been seriously challenged. The fact that when the sphincter of Oddi relaxes the gallbladder wall contracts is doubtless true, but instead of being due to contra-innervation it seems to be based on a well established law of physics, that an elastic tissue will contract if the force opposing it is weaker than the force of its contraction.

It has also been proven beyond doubt that the muscular fibers in the gallbladder act with the elastic tissue in emptying the viscus. Several observers, working under local anaesthesia, have been able to demonstrate a definite gallbladder peristalsis which was plainly seen after the subcutaneous injection of pituitrin or adrenalin or after the instillation of mag.-sulph. solution into the duodenum. The rate of gallbladder contraction has been found to be 4 to 6 per minute.

Without going farther into these controversial points I wish to give my conception of how the gallbladder acts. The gallbladder cycle includes all the time from the close of digestion of one meal till the completion of digestion of the next meal and is divided into two stages. During the first stage, the period of digestion rest, concentration of bile is actively going on; during the second stage, the period of active digestion, contraction of the gallbladder rapidly carries the concentrated bile into the duodenum.

The phenomena follow each other about as follows: After the stomach is empty and no more chyme is passing into the duodenum the sphincter Oddi shuts down and stops the flow of bile into the duodenum. This raises the intra-ductal pressure and as the bile continues to come from the liver it is forced through the cystic duct into the gallbladder. The watery elements are rapidly absorbed by the highly specialized villi, reducing the volume and leaving space for more bile all the time. The concentration is sufficient so that the gallbladder is capable of storing all the bile excreted by the liver until the next meal is ingested.

Another meal is taken and this marks the beginning of the second stage of the gallbladder cycle. As the chyme enters the duodenum the sphincter Oddi relaxes, producing a fall in intraductal pressure, there is an instantaneous recoil of the stretched elastic fibers in the gallbladder wall and simultaneously the muscle fibers begin their rhythmical contraction and the concentrated bile is steadily and fairly rapidly expelled from the gallbladder into the common duct and passes into the duodenum. This process continues until the gallbladder is almost empty—it does not have the power to completely empty,—or until the end of digestion, when the sphincter Oddi shuts down again and the first phase of the next cycle begins.

I can conceive that the emptying of the gallbladder may be aided by the active peristalsis of the powerful duodenum acting like a suction pump and by the increased intra-abdominal pressure produced by the lowering of the diaphragm in its excursions during respiration and by the ballooning of the stomach from a meal. These latter factors I conceive to be subsidiary and much less important than the active contraction of the gallbladder itself.

Another important function is supposed to be performed by the gallbladder. It has something to do with cholesterol but exactly what that relationship is remains in obscurity. The physiologists are still in disagreement. Some believe it is an active elaborator of cholesterol; others believe it is only concerned in its absorption.

It is hoped that this sketchy review of recent ideas of gallbladder function may assist somewhat in a better appreciation of causes of its diseases, the nature of its pathology and the symptoms by which its disease is manifested.

CHOLECYSTITIS

When I was a student, and for many years after, it was believed that cholecystitis was caused in three ways: (1) a descending infection carried down from the liver by the bile; (2) an ascending infection from the duodenum; (3) a hematogenous infection via the blood stream.

For many years these routes were supposed to explain the pathogenesis of gallbladder infection. Finally some experiments were made which completely upset the idea that bacteria in the bile would infect the normal gallbladder. It was found that cultures of any of the microorganisms usually found in cholecystitis could be injected by hypodermic needle through the gallbladder wall into its lumen without producing any result. It was found that the only method to produce cholecystitis by this means was to cause stagnation of the gallbladder contents or to grossly traumatize its mucous membrane. To put it concisely teeming hordes of pathogenic bacteria may be harbored in the gallbladder and they are harmless unless some gross pathology is already present.

This left only one of the time-honored etiological factors of cholecystitis with a leg to stand on. Many proofs by many investigators, the most noteworthy of whom is Rosenau, have been put forth to show that bacteria in the blood stream are very frequent causes of gallbladder infection. The onset of symptoms of cholecystitis so often noted after influenza and other acute infections is evidence that blood-stream infection is a potent causative factor. If all infections of the gallbladder are produced via the blood-stream it would seem that this little reservoir has less resistance to infection than the other organs.

Evarts Graham, noting the very great frequency of the association of appendicitis and cholecystitis sought an explanation. Was the cholecystitis merely the result of blood-stream infection, the bacteria having entered the circulation from the infected appendix, or was there a more direct relationship? Assistance in solving the problem was found in the almost universal association of hepatitis with cholecystitis, and the fact that the intensity of the hepatitis is always greatest in that portion of the liver nearest the inflamed gallbladder. Sudler has already shown a free anastomosis between the liver lymphatics and the gallbladder lymphatics. Assuming the presence of bacteria in the liver lymphatics it was easy to visualize an infection of the gallbladder wall via the anastomotic lymphatic loops between the liver and the bile cyst.

The appendix, the Fallopian tubes and much of the intestinal tract are tributary to the portal vein which passes to the liver, the great cesspool of the body. The liver, able to cope with a certain number of bacteria and destroy them or have them carried away through the bile ducts, has its limitations, and when abundant some of them might easily spill over and enter the lymphatics and thus enter the gallbladder lymphatics and infect its wall. This theory is given added significance from the fact that in cholecystitis the infection is in the wall in almost 100 per cent of the cases. It seems to have been shown beyond much doubt that the major causes of cholecystitis is by the blood-stream route and by the portal-lymphatic route, and we know that it occurs much more commonly than can reasonably be explained by the blood-stream route alone.

Experiments which show graphically the lymphatic relationship already indicated have been made as follows: Prussian blue injected into the wall of the gallbladder promptly appears in the lymphatics of the liver in the interlobular sheaths. Prussian blue injected into the portal vein is followed in a short time by its appearance in the lymphatics of the gallbladder wall. When Wilkie interposed mesentery between the gallbladder and liver, and then produced cholecystitis, he found that hepatitis did not result. In his control animals, in which cholecystitis was produced, the gallbladder remaining in normal relationship with the liver, hepatitis invariably ensued.

I am disposed to believe that the pathogenesis of cholecystitis is even more complex than has already been indicated. The thought is gradually being assimilated that cholesterol metabolism and calcium metabolism play a larger part in gallbladder pathology than has been suspected. Some change or error in cholesterol metabolism, little understood, frequently precedes and apparently prepares the way for infection. Dewey has been able to produce gallstones in rabbits by feeding them cholesterol until a hyper-cholesteraemia is produced. There is an increased blood cholesterol in pregnancy and in diabetes, both of which conditions are frequently associated with gallbladder disease incidence. The woman who is fat and forty, so prone to have gallstones, has usually been the victim of two fruitful sources of hypercholesteraemia, obesity and successive pregnancies. The individual who habitually over eats and leads a sedentary life is much more likely to fall a victim to gallbladder pathology than the small eater who leads an active life.

In cholestereosis, the so-called strawberry gallbladder, is seen a condition which speaks loudly in favor of a fault in cholesterol metabolism. The tall graceful villi, impregnated with cholesterol crystals, become brittle and may break off and become nuclei for stones. These pure cholesterol stones form without infection and are often symptomless. But they may produce trauma or lodge in the cystic duct and induce stagnation of bile which invites infection. I am of the opinion that many advanced cases of stone and infection started as simple strawberry gallbladders and by the time operation is done all hint of the original cholestereosis has disappeared.

It may be said in passing that bilirubin stones are the result of infection. The origin of calcium stones is little understood. They may be due to a fault in calcium metabolism, just as cholesterol stones seem to be the result of a fault in cholesterol metabolism.

The diagnosis of gallbladder disease is often exceedingly simple and sometimes it challenges the resources of the wisest and most experienced. There are three important steps in reaching a diagnosis and the slightest slip in any of them may result in a costly error:

1. A careful history.
2. A painstaking physical examination.
3. Various laboratory tests.

Of these three procedures I think as a rough estimate, taking the cases as they run, the value of the history will rank 70 per cent, the physical examination, 20 per cent, and the laboratory test, 10 per cent, in reaching a correct diagnosis. The high place given the history will not be attained unless great care is used. Every fact near and remote must be carefully weighed and recorded. Symptoms arising years before may give the key to the diagnosis. The fact that the gallbladder operation usually is not done until the symptoms have been present to a greater or less degree for many years proves that the history must be an exhaustive one. Belching after meals over a long period of time, perhaps beginning after an acute attack of appendicitis, or after a respiratory or other acute infection, is suggestive and may aid materially in the diagnosis. The record to be of greatest value must include the patients habits of eating and taking exercise. If a woman the number of pregnancies has significance. Someone has asserted that no woman after six pregnancies has a normal gallbladder.

While eliciting the history one should never be hurried. Put the patient at his ease and do not ask too many leading questions. It is often best to lead him to tell his own story, tactfully leading him back to his subject if he strays too far afield. Many more dependable facts will come to the surface if able to convey the idea to the patient that all one's time and attention are for him alone and for the time being he is the only person in the world.

Keep clearly in mind that stomach symptoms are more likely to spell gallbladder disease than any other organic lesion. Dwyer and his co-workers found that in 1650 consecutive patients complaining of dyspepsia organic disease was present in nearly one-half. The relative frequency of the organic diseases was as follows:

Gastric ulcer	1
Gastric carcinoma	2
Reflex appendicitis	4
Duodenal ulcer	6
Gallbladder Disease	12

These figures are astounding but are borne out by my own experience. About one-half the patients with dyspeptic symptoms due to organic lesions have gallbladder disease. Only 12 per cent with stomach symptoms had gastric pathology and only 4 per cent were afflicted with gastric ulcer. And yet we know that many pathological gallbladders finally operated have been treated for long periods for gastric ulcer. Of all these patients with dyspepsia found by Dwyer to be suffering from organic disease, 88 per cent of them had extra-gastric lesions. Truly there is truth in the old adage that "the stomach is the biggest liar in the body."

While the history taking is in progress it is well to avoid making a premature diagnosis which is likely to weaken one's efforts to get a complete history. The judge on the bench, who makes up his verdict before the evidence is all in, is not a safe judge. The doctor, who makes a diagnosis before all the data bearing on the case are before him and have been given full consideration, is not fair to his patient nor to himself. A snap diagnosis, which sometimes gives a doctor the reputation for brilliancy is never safe. It has been well said that "a hunch is the shortest road to a wrong diagnosis."

After the history has been completed the physical examination is to be carried out carefully and comprehensively, and without bias because of impressions made while taking the history. Every intra-abdominal organ is under suspicion. It is not enough to find tenderness over the gallbladder. Is there tenderness, or rigidity, or anything unusual over the appendix, the colon, the stomach, the pancreas, the spleen, the kidneys or the pelvic organs? Is the liver enlarged, or contracted, or tender. The heart, the thoracic cavity, the thyroid, the throat and the teeth must all be studied.

When all possible information has been obtained from a study of the history and physical findings it is time, and not before this point has been reached, for laboratory tests. Although the laboratory has been given a low percentage in evaluating these cases, it often furnishes the evidence necessary to clinch the diagnosis. The absence of bile in the stools, or its presence in the urine may weigh a great deal as evidence, though such findings as a rule are merely confirmatory.

The laboratory procedure most used at present, and the one seeming to possess the greatest value, is the Graham-Cole test. Proof of its value is found in the fact that it has so quickly come into almost universal use and those who have used it most are its strongest advocates. No one, not even its originators, have even suggested that it is more than an aid in diagnosis and as such it should be regarded.

To appreciate the Graham-Cole test one must realize that it seldom points out pathology. Its chief value is to show gallbladder function. When correctly used and properly interpreted it will give an answer to the following questions: Does the gallbladder fill promptly and normally? Does it perform its normal function of absorbing the watery contents of the bile? Does it empty in normal time? In addition the picture will sometimes reveal irregularities in size, shape or position thus showing that it is overdistended, contracted or distorted by disease, or that it is adherent to or pressed upon by other organs.

Personally, I do not believe it very important whether the tetraiodophenolphthalein is given intravenously or orally except that after its intravenous administration a radiogram should be taken in 4 hours and after giving it per oram in 12 hours. In a gallbladder which fills normally, after the oral administration, if the dye has been absorbed, there is good visualization in 12 hours. At 16 hours the shadow should be denser, this showing that there is normal concentration. After the 16 hour picture a fat meal of egg-yolk and cream is given and at the end of 3 or 4 hours the gallbladder is no longer visualized because all the dye has been expelled.

If the gallbladder is pathological the following phenomena may be observed:

1. Non-visualization at the end of 12 hours, indicating obstruction of the cystic duct or, rarely, lack of liver function, or complete filling of the gallbladder with stones.
2. Faint visualization at the end of 12 hours may mean subnormal liver function or incomplete stenosis of the cystic duct.
3. If the shadow has not increased in density 3 or 4 hours after the first radiogram it indicates poor concentration or no concentration.
4. Lighter areas distributed through the dark shadow are strongly suggestive of the presence of stones which are less opaque to the ray than the dye.
5. Deformity of the gallbladder shadow may be due to pericholecystic adhesions, pressure by other organs, or to distortion of the organ from fibrous tissue.
6. If the shadow has not disappeared by the end of 4 hours after taking the fat meal it reveals lack of ability for the gallbladder to empty.

When the Graham-Cole test has been carried out correctly and intelligently interpreted how fully can it be relied upon? Recent results reported by Graham and his co-workers will give the answer. In 446 cases in which the test gave positive findings the pathology was found in 97.8 per cent of the cases. This is encouraging. Although not quite perfect it approaches it so closely that when a positive test is found one can confidently recommend operation if the clinical findings are in agreement. A negative result is not so reassuring, for out of 115 cases in which the Graham-Cole test found a normal gallbladder the organ was found free of pathology in only 74 per cent of the cases. Taking this, the highest authority on the subject, as our guide there are 26 errors out of 100 cases when the Graham-Cole findings are negative. One's logical conclusion is that when the clinical picture of gallbladder disease is verified by the dye test one can confidently recommend operation. On the other hand if the clinical diagnosis of gallbladder disease is highly positive one can proceed with the operation even in the face of a negative Graham-Cole. Under such circumstances every careful surgeon will most carefully review the history, make another painstaking physical examination, and only when fully convinced that the clinical diagnosis is correct is he justified in recommending operation.

Soon after the Van den Bergh test came to our attention we began tentatively to make use of it. It is only fair to say that thus far it has not proven of as much practical value as was first hoped. It is based on the known fact that in the normal individual there are present 1 to 2 milligrams of bilirubin in each 1000 cc of blood serum. It is supposed that the bilirubin is elaborated from the red blood cells by the Kuepfer cells of the liver and by the extra-hepatic reticulo-endothelial system. The bilirubin thus produced will give the indirect Van den Bergh reaction unless it has been acted upon by the hepatic cells. In passing through the functionating hepatic cells to the hepatic capillaries the bilirubin is modified in some unknown way so that the Van den Bergh test gives the direct diazo reaction. This modification does not occur if the hepatic cells are not functioning. Therefore, when jaundice is present and the reaction is direct it shows obstruction is present and that the liver cells are functioning. Conversely, if the reaction is indirect, it would indicate that the jaundice is due to extra-hepatic diseases or that the hepatic cells are not functioning. Sometimes the reaction is both direct and indirect, the explanation being that biliary obstruction is present combined with subnormal function of the polygonal cells of the liver.

When the Van den Bergh test is indirect, operation is not wise because it is strongly suggestive of profound liver dysfunction or that the jaundice is due to extra-hepatic disease. When a biphasic reaction is obtained it is certain that there is obstruction with secondary sub-normal hepatic cell function, that operation is extra-hazardous.

The best practical uses of the Van den Bergh test thus far discovered have been to aid in the diagnosis of doubtful cases and in deciding the safest time to operate on extra-hazardous risks.

A word about latent jaundice is appropriate at this point. In a normal person there are present in 1000 cc of blood serum 1 to 2 milligrams of bilirubin. Jaundice does not become manifest in the skin and mucous membranes until the quantity of bilirubin has mounted to about 25 milligrams. When the blood serum contains more than 2 mgms. of bilirubin and up to the amount necessary to produce noticeable jaundice that condition is known as "latent jaundice". It is true that at this time bile may be present in the urine and a deficiency or absence of bile in the stools but the Van den Bergh test is much more exact and dependable. The test is especially valuable in doubtful cases, for it shows positively some damming back of the bile current as it passes through the biliary ducts, whereas a normal amount of bilirubin is proof there is no obstruction.

In serious cases with profound jaundice it is a great advantage to have some method of determining whether the obstruction is increasing or diminishing. The determination of the varying amount of bilirubin in the blood will furnish us this information. The most exact method of determining the degree of obstruction from day to day is a daily quantitative measuring of the amount of bilirubin. If it is steadily rising, increasing obstruction is apparent; if it begins to lessen in amount we can be sure the obstruction is becoming less complete. This lessening of the obstruction is often only temporary and may not be sufficient to produce any appreciable decrease in the jaundice. With a falling bilirubin index the hazard of operation is much less than when the bilirubin index is rising, and thus the Van den Bergh quantitative test may be made a valuable aid in determining a favorable time to operate.

(To be continued in July issue.)

SOME PHASES OF ACUTE INTESTINAL OBSTRUCTION*

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It is hoped with the presentation of these lantern slides, that our lack of knowledge as to the treatment and cause of death in intestinal obstruction has been duly emphasized. Summarizing I may say that experimentally, animals are not benefited in high intestinal obstruction and paralytic ileus by jejunostomy and that jejunostomy alone is as lethal as high obstruction. I believe these experiments substantiate the work of Haden and Orr. In the terminal ileum, ileostomy is not as fatal as obstruction, as some of these experimental animals live three to five weeks; indicating possibly that enterostomy may under certain conditions be of temporary benefit. Haden and Orr produced general peritonitis and paralytic ileus in animals and found that enterostomy did not prolong life. Personally I believe that there is considerable evidence that the cause of death in paralytic ileus is similar to that of obstruction as in both instances blood findings are similar, the intestines are distended and the intestinal contents can no longer be propelled along the gastro-intestinal tube. My own clinical observations and experimental evidence leads me to doubt the value of most enterostomies except in cases where it is impossible to release the obstruction, such as an inflammatory mass in the region of the terminal ileum. In such conditions an enterostomy or some type of enterocolostomy is life saving. Therefore in most cases where the continuity of the intestinal tube can be reestablished or in paralytic ileus, I believe the ordinary methods such as gastric lavage, enemas, hot abdominal packs, drugs and intravenous hypertonic saline or spinal anesthesia are more life saving than enterostomy. However, until we have more critical clinical observation with the above experimental evidence in mind we can arrive at no definite conclusions. Without a clear conception of the cause and pathological physiology of the condition, naturally, our means of treating the condition will not be on a sound scienitfic and clinical base but merely conventional.

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The classical symptoms of colicky pain, vomiting, distention and obstipation, particularly in a patient who gives a history of a hernia or previous operation, should always suggest the diagnosis of acute intestinal obstruction. At times any one of these symptoms may be absent. The temperature is usually normal or subnormal. Pulse may be slightly increased or very rapid and weak. Patient is restless, looks ill but yet mind may be acute. Sunken cheeks are indicators of dehydration. There are beeds of perspiration, cold and clammy extremities with fibrillary twitchings and cyanosis of lips and nail beds. The blood pressure is lower, urine is scanty and the blood findings show a high nonprotein nitrogen and urea nitrogen and an increase in the CO_2 combining power. The blood chlorides are low; the blood phosphates high, patient sinks into coma and death. Arriving at a diagnosis we must distinguish between the three types of intestinal obstruction; paralytic ileus, where pain is not colicky and distention is most marked, simple obstruction and obstruction with strangulation. The strangulated type is the most rapid in the development of toxemia.

The condition of these patients with simple obstruction and obstruction with strangulation demands that we prepare him to withstand an operative insult to an already severely injured organism. If the case is paralytic ileus, the treatment is the same except that there is no obstruction to release. Without doubt, introduction of sodium chloride solution as so emphasized by Haden and Orr is of the most useful value. This may be given by hypodermoclysis in normal to 3 per cent solution or intravenously in a normal to 10 per cent solution to establish a normal blood chloride value. The patient should receive about a gram of sodium chloride per kilo. Five per cent glucose in Fischer's solution per rectum is advisable. Transfusion most certainly has its place. The stomach should be lavaged. Patient must be kept warm and morphin given to combat shock which as yet has not been proven as not the cause of death in these conditions. Surgery cannot be abandoned except in the paralytic ileus case, as surgery is the only means of releasing the obstruction and this must be done very early and without delay.

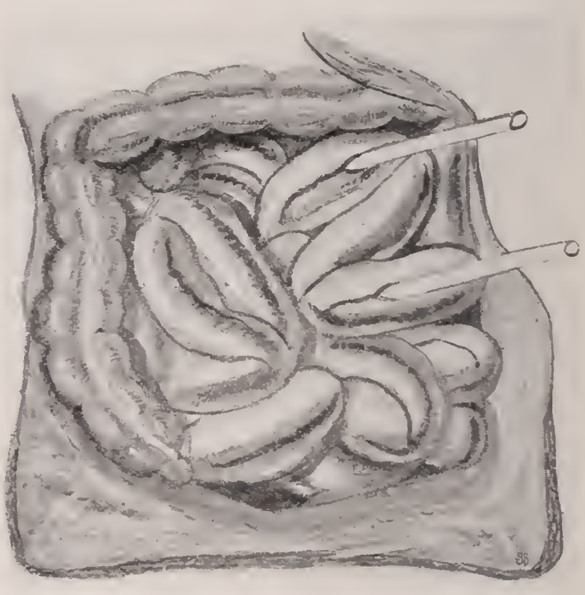
Fig. 1. Sketch made at a secondary operation and verified immediately after death of case of peritonitis and paralytic ileus in a 10 year old boy shows two drainage catheters placed 16 inches apart, yet failure of drainage of intestinal contents between catheters. Each tube drained profusely.

The preoperative treatment as suggested may be carried on during the preparation of the patient for operation. The obstruction must be released. Jejunostomy or enterostomy in paralytic ileus or true obstruction type where obstruction has been released has only doubted value except possibly in selected cases as discussed heretofore and may be an added insult. Aside from the question of the possible harm in a physiological sense, it is a question whether it is mechanically possible to drain the intestine (Fig. 1). If one takes an old inner tube, inflates it and crowds it into a given container such as the distended intestines are crowded into the abdominal cavity, he will find by removing the valve that very little air is expelled from the tube because of the valve like links. Then with a paralytic bowel wall very little can be expected. However, it is advisable to empty the distended bowel of its contents at the time of operation by means of trocar and light suction apparatus or milking process between thumb and finger. As I converse with my surgical colleagues, I feel that in many instances they are gradually losing faith in jejunostomy. I believe that there are more nearly normal methods of accomplishing the emptying of the intestines which are of better value, therefore, I have practiced with better results the substitution of hypertonic sodium chloride (50-75 cc of 20 percent solution) or spinal anesthesia with spinocaine or neocaine. If my results continue to be as good or better, I hope to publish a series of cases.

Various enemas and drugs such as pituitrin still hold their place. Following release of obstruction or in paralytic ileus cases, fluids, again emphasizing sodium chloride to keep the blood chlorides normal, should be given in amounts ranging from 3000 to 5000 cc. every 24 hours. Following operation on these cases I always use, no matter if clean or infected cases, hot abdominal packs extending from the ensiform to the pubis and to each mid-axillary line. This not only relaxes the abdominal muscles and provides body heat but with morphin diminishes the pain which leads to shock by the bombardment of the central nervous system.

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DISCUSSION

DONALD MACRAE, M. D., (Council Bluffs, Ia.): This is a subject dear to my heart. It seems to me a great many people do not realize what jejunostomy does for dying patients. I realize the dogs experimented on die in a few days. I also know when you open a dog's chest widely, it dies. For centuries we were afraid to go into the chest, until Dr. Duvol opened the chest of dying French soldiers during the World War and reduced the mortality of chest wounds from 90% to 30%. We had been led astray by the dog. When the deductions are made that should not do a jejunostomy because of the fact the dog dies, I say it is of no interest to the medical profession. That is a beautiful paper to be read before the veterinarians' organization, but not for the human race, for jejunostomy has come to stay and will be used more and more as surgeons become more experienced. My experience has covered several hundred cases of experiments on the human beings. My mortality has been reduced 75 percent by jejunostomy.

I was waiting for Dr. MacKinnon to get up, but I do not think he is here. I have "gone him one better" in that we anticipate "peritonitis" or obstruction in every severe case, and perform high jejunostomy in the course of our operation.

One of the greatest of abdominal surgeons Moynihan said: "There is no inflammation without obstruction." Bonney has shown that it is the upper small intestinal fluid content that poisons the patient. It is a toxemia of some kind taken up by the upper part of the small intestine where the fluid is that kills our so called peritonitis cases. We can take a large intestine and obstruct it as you have seen it in carcinoma, the large intestine distends, the patient has pain but he is not yet toxic. Relieve this by putting a colon tube in the colon and wait until he recovers, and then go after the obstruction.

He is not sick until poison enters the small intestine, and passes the ileocecal valve then, and only then does he show signs of toxemia.

Every foot of the intestine has a specific office the same as the mouth and rectum. A man will not eat fecal matter without being sick. Any foot of that bowel content put where it should not be will cause poison.

While the dog dies in five days, the human being does not die. We have cases all the time—no time in the hospital without from one to a dozen tubes in the jejunum—and not one dies, the result of jejunostomy. They heal up as soon as I pull the tube out. Only one case lasted more than a few days after the tube was removed. We have had definite cases of peritonitis where we have gone in late and put in a tube, and have had the patient recover. The patient does not die with peritonitis, as a rule. I think death from peritonitis is rare. Death results from absorption from the intestinal tract. They die and we call it peritonitis. Years ago when we had these cases of "inflammation of the bowels" dying, we did posts and found everything gangrenous. We did not know it was the appendix doing the whole thing. Today we are doing postmortems and call the death "peritonitis." If we go in early enough, and put a tube in the jejunum, in forty-eight hours we may see the patient recover, therefore it cannot always be peritonitis producing the death.

I have had many discussions with Dr. Orr from one end of the country to the other, but no amount of dog argument will stand against a large experience with the human animals. We have no objection to salt. It is fine, but this jejunostomy method of saving lives was done long before we even heard of Orr or Hayden.

My clinical observation has been that a tube in the upper end of the jejunum will always drain, providing intestinal peristalsis is still active. Another observation that I have made, is, that many so-called jejunostomies that do not drain, are really not in the upper part of the jejunum. I have seen surgeons make an incision in the upper left quadrant, introduce a finger, and bring out the first loop of intestine presenting. This is just as liable to be near the terminal ileum, as it is the beginning of the jejunum, and they wonder why it does not drain.

The reason for selecting the upper part of the jejunum for an enterostomy should be apparent. The bowel proximal to the obstruction is the most distended, and when muscle is stretched beyond a certain point, it loses contractile power. The paralysis of the bowels begins with intestinal distention. The upper end of the jejunum is the last part of the bowel to become distended, and retains its peristalsis longer than any other part of the intestinal canal.

What is true of mechanical obstruction of the bowels, also applies in so-called paralytic ileus. It is not unheard of to have an ileus follow an operation on the deep urethra. I had one case where a jejunostomy apparently saved his life. Another case of ileus, complicated acute multiple arthritis, (acute rheumatism), with intestinal vomiting, where a jejunostomy relieved his abdominal symptoms. Another case of ileus. with intestinal vomiting, complicating, a septicemia with myocarditis, following an operation on the nasal septum. He was relieved of his abdominal symptoms by a jejunostomy, and made a recovery. Ileus complicating peritonitis is the ordinary course of the disease, and in a few cases of ruptured appendix, with general peritonitis, that were neglected, and a surgical operation was out of the question, a tube in the jejunum, with a local anesthetic. cured them without any other surgery.

Until we know more about the physiology of intestinal peristalsis, the surgeon must depend on his clinical observation. A patient with distention of the intestines, is in a serious condition. This holds true, whether distention is due to a mechanical obstruction, or a disturbance of the innervation. If we can relieve the distention, the patient can be held in the safety zone. This can be done by a jejunostomy performed with a local anesthetic, better than any other method that I know of.

If the use of hyper-tonic salt solution has any virtue, it is as a stimulant to peristalsis, and is a dangerous practice, unless we are sure there is no mechanical ileus.

DR. BEST, (closing): Most of the prominent surgeons of the day express dissatisfaction and doubt in the value and the results of upper intestinal drainage in intestinal obstruction and paralytic ileus, except in certain selected cases as discussed heretofore. I fear Dr. McCrae and Dr. MacKinnon as well as the rest of us, are many times the victims of conventionalism and as long as we are the victims of conventionalism, that particular field of medicine ceases to advance. Kindly do not interpret my presentation as an attempt to definitely settle the question of high intestinal drainage as I have merely given the experimental evidence of others as well as my own and the clinical observation of others and my own.

Provided the intestinal tube is in continuity, I believe it better to empty it by peristalsis produced by hypertonic sodium chloride intravenously or spinal anesthesia than by a crude tube put in a rectus muscle. The physiology of intestinal secretions and absorptions is very complex and since experimentally the dumping out of intestinal contents of the duodenum and jejunum are as fatal as obstruction I believe that we should seriously consider and investigate means by which the intestinal contents may be passed on through the intestinal tube to its normal terminus.

A CLINICO-PATHOLOGICAL CONFERENCE

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The case herewith presented was the subject of a clinico-pathological conference at the Saint Elizabeth's Hospital March 25, 1930. The exact discussion is not here reproduced but a summary of the main points brought out is given.

CASE RECORD

Mrs. Anna S. Case No. C-157, St. Elizabeth's Hospital. Admitted to hospital January 24, 1929. Age 60. Female. Widow. Bohemian. Housewife.

Family History: Father died at 82, old age. Mother died at 65, had rheumatism late in life. One brother died of cancer, one of apoplexy. Husband was paralyzed and died four years ago.

Previous Diseases: Always well and a hard worker. Had menopause at 51; was rather nervous, and thinks not so well since change. After husband's death was more nervous. Has had hemorrhoids, and her local doctor says also fissures, which have been bleeding off and on for sometime. No operations. Bore seven children, all healthy. One miscarriage.

Present Symptoms: (1) Vomiting. (2) Pain in the back. (3) Heavy feeling in the stomach. (4) Loss of weight and strength.

About Thanksgiving time (8 weeks ago) began to have pain in her back which came after shoveling some snow. It radiated about the chest, both sides. Now a slight pain in back if moves much.

About three weeks ago began having a heavy feeling in stomach, after taking foods or even water. For several days at a time will vomit all she takes. No blood or coffee-ground material; not sour, but bitter. When bowels move she is likely to vomit. Constipation has been marked.

Has lost weight and strength.

No headache, no vertigo, no edema, no dyspnoea, no orthopnoea, no nocturia, no symptoms referable to the urinary tract, no cough.

Examination: Temperature 98. Pulse 106. Blood pressure 160/60. Nutrition fair. Color a bit pasty. Skin loose and atrophic.

Head and Neck: Mouth edentulous. Tongue dry, coated. Throat negative. No enlargement of lymph glands nor thyroid. Vessels pulsate moderately, especially in suprasternal notch.

Thorax: Walls negative. Breasts negative. Lungs —no evident lesions. Heart—slightly enlarged to the left; systolic blow at apex, maximum in 4th interspace; rough systolic at aortic area, transmitted upward to neck vessels.

Abdomen: Flat, flaccid, no rigidity, no masses, no fluid. There is tenderness maximum in the epigastrium, and also some tenderness over both lower quadrants.

Pelvis, by rectum, negative.

Rectal: Small hemorrhoidal tags present, otherwise negative.

Extremities and reflexes negative.

Laboratory Findings: Six urinalyses, over a period of ten days, gave specific gravity ranging from 1010 to 1015, reaction acid; a faint trace of albumin always present; all but one of them showed hyalin and granular casts, a few pus cells; no blood.

Blood count: 4,040,000 red cells; 7,600 white cells; hemoglobin, 70%. Blood Wassermann negative.

Blood Urea Nitrogen 60 mgm. per 100 cc. (=128.4 mgm. urea).

Stool analyses, two: One showed a faint trace of blood; the other, negative.

Fractional Gastric Analysis: Total acidity 10; free hydrocholoric acid absent; blood present in all specimens.

Fluid intake and output: Vomiting prevented normal intake of fluid. The intake up to the time of operation varied from 200 to 1960 cc., average 1280 cc. Output of urine varied from 585 cc. to 1080 cc., average 685 cc. On five of the six days it was measured, it ranged from 585 to 630 cc. The specific gravity ranged from 1.010 to 1.015. It was 1.015 in three of six specimens and 1.014 in a fourth.

Consideration of the possibilities with the information at hand to this point gave the following:

a. Chronic nephritis with nitrogen retention. It was agreed that this disease could account for most of the findings and complaints but that the sudden onset of pain in the back, the lack of preceding history with rather rapid decline over a three weeks period, the finding of the blood in the stool and stomach contents and the lack of free hydrochloric acid might demand a better explanation. That chronic nephritis with retention of nitrogen was present, was accepted but the following possibilities were also considered:

b. Carcinoma of the stomach because of emaciation, vomiting, absence of free hydrochloric and presence of blood in gastric contents and stool.

c. Chronic cholecystitis, probably with stones, because of vomiting, lack of free hydrochloric acid, and tenderness in upper abdomen.

d. Chronic arthritis of the spine, possibly not a part of her illness aside from the possible production of the back pain, particularly as the pain came abruptly while she was doing unusual work and had subsided a great deal before the onset of the other symptoms.

e. Partial obstruction of the bowel, possibly by a malignant growth, because of marked constipation, severe vomiting, emaciation, blood in stool.

The point was also brought out that one should expect to find a hypertension heart, because of the blood pressure, the chronic nephritis, and the physical findings of enlargement to the left with a systolic blow at the apex and a rough systolic murmur at the aortic area, transmitted upward.

The following x-ray findings were then presented: Roentgenological findings revealed, cholelithiasis, and slight narrowing at junction of sigmoid and descending colon—"Do not think it malignant"—and hypertrophic arthritis of the spine. Barium still present in sigmoid and rectum five days after it was administered. The stomach and small intestine were normal.

We are now in possession of two more definite facts, namely that cholelithiasis and hypertrophic arthritis of the spine are present. There is just a suggestion that some obstruction of the bowel may be present at the junction of the sigmoid and descending colon and we feel that carcinoma of the stomach is quite unlikely. The following resume of the progress and nurses notes seem to add to the possibility of obstruction.

Bowels: Constipation was obstinate. Enemas were retained. There was constant distention of the colon. It could be outlined by palpation and visually. Vigorous peristalsis was often visible along the descending colon and sigmoid; usually failed, however, to produce either the expulsion of gas or feces. Calomel, various types of enemas, turpentine stupes, alkaline laxatives failed to get results. The best results were obtained by calomel and milk of magnesia followed at the proper time by pituitrin and an enema. The stools when voided were extremely foul.

Temperature: No fever from admission on January 24, 1929, to January 31, 1929, when she had one degree. The following day 100.2. There was slight daily pyrexia but never over 100 from this day until operated.

With this information the clinicians had decided that they were dealing with:

a. Chronic nephritis with nitrogen retention and hypertension with hypertensive type of heart, though the factor of chronic cholecystitis in its relationship to chronic myocardial changes was considered.

b. Chronic cholecystitis with cholelithiasis.

c. Chronic hypertrophic arthritis of the spine.

d. Finally some obstructive lesion of the descending colon or sigmoid.

The conference agreed, in the main, with these points though as it was suggested that the bowel condition might be a part of chronic nephritis or vice versa, if a chronic partial obstruction of the bowel were present it might account for the findings which we took to mean chronic nephritis.

On January 9, 1929, the patient was operated under local anaesthesia. Stones were removed from the gallbladder and a drain inserted. A colostomy was done in the sigmoid region. The colon was markedly distended and the wall thickened particularly the descending portion. The distention ceased in the lower sigmoid but no organic reason could be seen at operation for an obstruction at this point. A colostomy was made because of the clinical findings, the appearance of the colon and the feeling that drainage of this gut might facilitate the patient's recovery. The operation was completed in one hour without apparently disturbing the patient. Pulse rate before 76 and 80 and after operating 86 to 88.

The pulse gradually rose to about 145. The temperatures gradually rose to 105. The blood pressure fell progressively. The patient was comatose. Though fluids were given by hyperdermoclysis but little urine was passed and this involuntarily. The bowels moved both through the colostomy and rectum. She died 84 hours post-operative.

PROTOCOL OF POSTMORTEM

Died: February 9, 1929, at 7:30 p. m. at St. Elizabeth's Hospital.

Postmortem: February 9, 1929, at 8:30 p. m. at St. Elizabeth's Hospital.

External Appearance: The body is that of an old woman of medium height, and heavy boned. The pupils are moderately dilated, equal and regular. The body heat is still present and rigor mortis has not appeared. There is very little lividity. In the abdomen there are two recent surgical wounds, one in the midline below and one in the gallbladder region. From the upper, three rubber tubes protrude. From the lower wound a single rubber tube protrudes. There are needle puncture marks beneath each breast.

Peritoneal Cavity: The primary incision shows a good coat of sub-cutaneous fat, yellow in color. The omentum is adherent about both recent surgical wounds. The lower surgical wound is a colostomy in the sigmoid region and apparently has not leaked. The rubber tube enters the lumen of the sigmoid. Upper surgical wound: The large tube enters the gallbladder while the two smaller ones extend into the gallbladder region. The coils of the intestine in the pelvic region show considerable injections. A bloody fluid is present in the cul-de-sac. The diaphragm reaches the 5th rib on the left and the 4th on the right.

Pleural Cavity: Left lung is adherent to the pericardium by a few slender bands and is also adherent to the diaphragm posteriorly in the same manner. About an ounce of amber fluid is found in the left cavity, also a large flake of fibrin. The right lung is adherent to the pericardium and diaphragm, also to the chest wall laterally, and a little around the apex. There is no increase in fluid in the cavity.

Pericardial Cavity: The pericardial sac contains an ounce of slightly cloudy blood tinged fluid. The pericardium is smooth.

Lungs: Left: The pleura is torn where it was adherent posteriorly. Underneath it are a good many small hemorrhages. The lung is not heavy and contains air throughout. On the lower border, laterally, there is a large calcified nodule the size of a small marble; it lies under the pleura. On opening the nodule it was found to contain caseous material and a considerable deposit of calcium. The cut surface of the lower lobe is deep red in color, it is moist and shows no typical areas of consolidation. The opposite lung: There are some tags of fibrous tissue on the lateral surface of the upper lobe. On the upper lobe 1½ cm. below the apex and at the base of a fibrinous tag there is a bunch of calcified nodules about ½ cm. in diameter. Right: The three lobes are adherent to each other and air containing throughout. The lower lobe is considerably darker than the upper lobe. The cut surface is red and moderately moist. There is no pus nor is there any definite lobular consolidation. There are also some small calcified hilum nodes.

Heart: The heart weighs 325 grams. There is nothing remarkable about the external appearance. A few small areas show thickening of the epicardium. The right auricle is of about normal size. The foramen ovale is closed. The tricuspid admits three fingers. The measurements of the tricuspid are: A maximum diameter of about 3.5 cm. and circumference of 11½ cm. Its leaflets are normal. The wall of the right ventricle contains a good deal of fat. The cavity is not particularly dilated. The mitral valve just admits the tips of two fingers. It has a diameter of 3.5 cm. and a circumference of 11.2 cm. The leaflets show no vegetations. The tips of the papillary muscles are pale, yellowish in color. The maximum thickness of the left ventricular wall is 1.7 cm. The muscle is deep red in color and a little soft but of fair consistency. The aortic valve shows a little stiffening of the bases. The coronary vessels are normal.

Spleen: Is small and partly adherent at the lower pole. The external and cut surface appear normal.

Liver: Is perhaps a trifle smaller than usual, showing a thickening of the capsule, with fibrosis in the region of the gallbladder. The markings are visible through the capsule. The color is a gray-brown on the outside and the cut surface is a dirty brown. Cut surface: A lot of blood, markings are visible, the center lobules are dark in color, and there is no increase in connective tissue.

Gallbladder: Is contracted and has been opened for drainage. The wall is thick and gray and contains mucoid, bile stained material. The mucous membrane is present and shows no particular bile stained material. No stones. No palpable stones in the common duct.

Gastro-Intestinal Tract: The stomach is not dilated but there is some fluid present. The small intestine: There is hemorrhage under the serous membrane all along the small intestine. There are areas of discoloration and they are more marked near the ileocecal valve. The appendix is adherent beneath the ileum near the cecum. It is long, about 12 cm. The lumen is patent. The large intestine shows no marked abnormalities externally until the distal end of the transverse colon is reached, there a portion of the transverse colon running upward to the spleen ten inches in height is closely adherent to the descending colon. This portion of the gut is very red and injected. The sigmoid is quite markedly dilated and its wall feels thick. The small intestine when opened was found to be negative. The large intestine: Beginning in the cecum there is thickening of the wall and a diffuse shallow ulceration. The whole inner surface from the cecum to the middle of the descending colon is covered by a gray membrane. The wall is thickened and a large part of the serous surface is red. There is no definite area of obstruction.

Pancreas: Is of normal size, shape, and consistency. It does not cut with increased resistance. No gross pathology seen on the cut surface.

Suprarenals: Shows no evidence of gross pathology.

Kidneys: Left: Is moderately adherent to its fatty capsule. It has a single ureter and is normal in size but very soft. It weighs about 165 grams. A few small cysts are visible under the capsule. The capsule is somewhat thickened. The cut surface is more or less homogenous in color. The cortex is thin, uneven, gray-red in color and the striations are coarse and not very plain. The cortex and medulary portion are poorly separated. The capsule strips with some difficulty and leaves a granular surface. The right kidney is as adherent as the other and it has a single ureter which is somewhat dilated. The pelvis contains a small amount of cloudy urine. It is soft like the other kidney and weighs 160 grams. The capsule is thickened. The cut surface is quite like the other kidney. The cortex is thin but not quite as thin as the other. It is pale in color, and has gray light colored striations. The capsule strips with difficulty tearing the surface of the kidney leaving it rough and granular.

Pelvic Viscera: The uterus is small and soft. The peritoneum covering is very red. There are no masses. The ovaries are small, and sclerotic. The tubes are normal, other than injection of the serous membrane.

Amatomical Lesions: Chronic adhesive pleurisy, bilateral. Healed pulmonary T. B., bilateral. Acute pericarditis. Some degree of chronic hepatitis. Diffuse, so called, diphtheritic colitis. Chronic and acute nephritis. Some degree of peritonitis, acute. Recent colostomy, and drainage of the gallbladder.

Probable Cause of Death: Acute and chronic nephritis, uremia and diphtheritic colitis.

Sections of the kidney show a thickened capsule with numerous old subcapsular infarcts; sparsity of glomeruli; many of those remaining are undergoing hyalinization. There is atrophy of tubules and considerable increase in connective tissue. The vessel walls are thickened. Chronic diffuse nephritis.

Sections of the colon wall show almost complete destruction of the mucosa, it being replaced by a heavy coat of fibrin. Remnants of epithelium may be seen in this fibrin. Toward the muscularis mucosae, cellular infiltration becomes predominant, the cells being largely polymorphonuclear. This infiltration extends into the submucosa. Some edema is present as deep as the muscularis.

This type of colitis is seen most commonly as a terminal complication of chronic nephritis. It's name, "diphtheritic" is, of course, misleading and it should be called fibrinous or pseudomembranous. It is a confusing condition and, it seems to me somewhat difficult of diagnosis.

CASE STUDIES IN GOITRE, NO. IV—ADENOMATOUS GOITRE*

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Under this terminology there is grouped a series of cases in which there are from one to several nodular enlargements in the thyroid gland which as a rule can not only be felt but also seen as a rather ungainly deformity in the neck. Histologically the tumors or masses are for the most part the so-called adenomas of the thyroid gland. They consist of rounded or oval shaped encapsulated masses of various sizes occupying any portion of the thyroid. They are, in their early stages, rather hard to the touch but may take on an elastic, or even a semi-fluctuating consistency as time goes on and degeneration occurs in them. Under the microscope the cells of the alveoli are hypertrophied and in the majority of instances they take up considerable of the lumen of the individual alveolus, thus diminishing the amount of colloid, although they retain their cuboidal shape. As the disease progresses there is a degeneration of the parenchyma of the cell and also of the nucleus with final destruction of the cell, disintegration of the alveoli and the formation of a degenerated mass of tissue contained within the capsule of the main adenoma which, in the majority of instances, is gradually replaced by connective tissue and there may or may not be the deposition of lime salts in the connective tissue thus formed. As a rule, in moderately advanced cases, all types of this degeneration with connective tissue formation and occasionally calcareous deposition can be found in the gland. At the same time in other portions of the gland it is rare not to find a certain number of cells which have assumed the columnar type of the hyperplastic goitre and also colloid changes with enlargement of the other alveoli to produce more colloid to carry on the function of the gland which is lost in the adenomatous portion.

Clinically the disease begins in early life with the formation of one or two of these nodules which gradually progress in size and new nodules are then felt. After the disease has been present for ten to twenty years symptoms of hyperthyroidism arise. The degeneration of the adenomata causes a dysfunction of the gland which in turn gives rise to the symptoms which we know as hyperthyroidism which will be discussed at a later time. In the early stages there are practically no symptoms of hyperthyroidism unless an intercurrent disease temporarily causes a dysfunction of the thyroid with a slight rise in basal metabolism, occasional nervousness and practically no other symptoms of thyroid dysfunction. This syndrome may come on during any infectious disease, during the development of a point of focal infection as in the present case, or when the forces of the body are called upon to resist any untoward strain

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Case history: M. M. (female) married, age 22 years, was admitted to the University of Nebraska hospital on February 3, 1927, complaining of (1) enlargement of the neck, (2) nervousness and (3) palpitation.

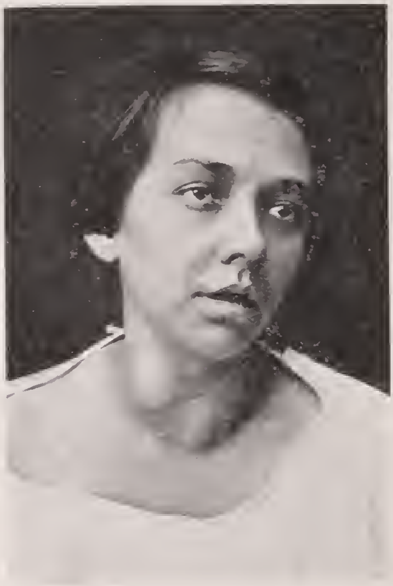

Fig. I. Mrs. M. M. Nodular goitre. Non-toxic.

Onset and development: The patient has noticed a slight lump on the right side of her neck as long as she can remember. It has never given her any appreciable trouble and has not been particularly noticeable until after her baby was born three years ago. About two and a half years ago the lump on the right side began to become more prominent and has progressively increased in size up to the present time. Nervousness and palpitation have developed coincidently. The patient presented herself to the dispensary because of the appearance of her neck and concerned with her palpitation.

Previous illnesses: Childhood diseases: Measles, mumps, chicken pox, goitre. Adult diseases: Negative. Injuries and operations: Tonsillectomy and adenoidectomy eight and nine years ago. Her history is otherwise negative except that for many years she has had teeth which have gradually been decaying.

Family history: Father living and well. Mother is living and not well, suffering from many symptoms of nervousness, palpitation and has a goitre. Two brothers and one half-brother living. Her oldest brother has a goitre. The others are well.

Physical examination: Well nourished, bronzed young woman lying comfortably in bed. The bronze color of her skin and entire body is particularly noticeable. Eyes: Reaction of pupils to light is questionable. There is no exophthalmos, no lagging of the lids, or other significant eye findings. Ears: There is diminution of hearing in the right ear. No obstruction, redness nor secretion. Nose: No obstruction, redness nor secretion. Mouth: All the teeth are in very poor condition and there are many cavities. Stumps only remain of the upper incisors. The tonsils are gone, pillars are slightly injected. Neck: There is a large circular mass about 3 cm. to 4 cm. in diameter in the region of the right lobe of the thyroid, which is smooth, regular and elastic. Medially at the lower edge of the right sterno-cleido-mastoid muscle there is a small firm irregular nodule about 1 cm. in diameter. The isthmus of the thyroid is felt and the left lobe seems smooth, firm, but not enlarged. There is the suggestion of a bruit over the right mass. The left submaxillary glands are readily palpable. Heart: The apex is not seen, it is felt in the fifth interspace in the midclavicular line. There is no apparent enlargement to the right or the left. Over Erb's point a soft systolic murmur is heard. Aortic and pulmonary second sounds are equal in intensity. The rate is regular, 88. The lungs are negative. Abdomen: Negative. Extremities: Negative.

Laboratory examinations: Urine: Negative throughout on several examinations. Red blood cells on admission were 5,630,000 per cu. mm. with 75% hemoglobin and a color index of minus 1. The white cells were 6,500 with 75% polymorphonuclear leukocytes and 25% of lymphocytes. The blood pressure on February 9 was 132/84. On the 10th of February the basal metabolic rate was reported as plus 30% and at the same time her temperature was 99°, pulse 80 and respirations 20 with no signs of hyperthyroidism present.

This patient showed an irregularly shaped thyroid gland containing at least two large masses which could easily be felt. She complained of the usual syndrome of hyperthyroidism but aside from the increase in the basal metabolic rate none of the other objective symptoms usually accompanying this condition could be demonstrated. The heart rate was normal. There was no tremor and there were no eye signs. The conclusion was reached that probably the symptoms of which the patient complained were due to a slight increase in thyroid dysfunction due to the marked focal infection present in her teeth and it was judged best before the thyroid was removed to have the teeth cared for. Consequently, on February 5, two days after admission, she was operated upon by Dr. Ralston and a complete alveolectomy performed removing all the teeth. From this she made an excellent recovery and on the 12th of the month, seven days later, a subtotal thyroidectomy was performed under paravertebral anaesthesia without any untoward incident. Examination of the gland at the time of operation showed many adenomata, a considerable number of which were degenerating and cystic and these were removed leaving about one-sixth of the gland

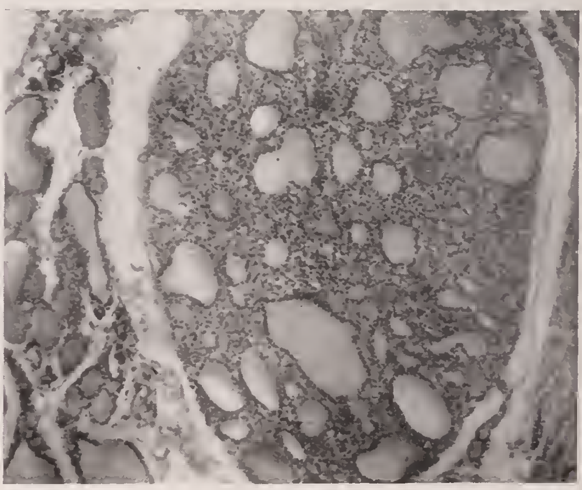

Fig. II. Mrs. M. M. Photomicrograph of an encapsulated adenoma. Note the areas of hyperplastic infolding.

attached to the posterior capsule on either side. The muscles were sutured with chromic catgut and the skin closed with a dermal suture.

Following operation the highest temperature was 101.6° and the highest pulse rate was 130 immediately after operation falling by the second day to 90 Her convalescence was uninterrupted and she was discharged from the hospital on the sixth day after operation with a normal temperature, normal pulse, normal respiration, and a metabolic rate of plus 8% on the morning of the day of discharge. The patient has been seen several times over a period of three years after operation and is apparently in perfect health.

The examination of the gland under the microscope shows it to be an extremely interesting one and demonstrates nearly every type of abnormal condition found in the thyroid with the exception of carcinomatous change and calcareous degeneration.

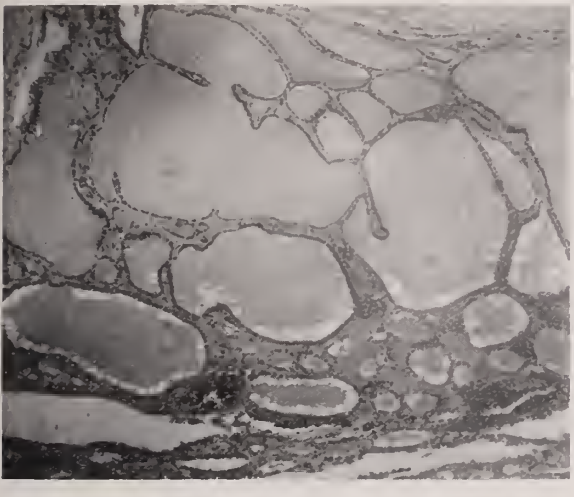

Fig. III. Mrs. M. M. Photomicrograph. Note variation in size of acini and also different types of cells forming the lining.

Gross description: The specimen, weighing 112 gms., consists of a roughly U-shaped mass of tissue, said to be thyroid, apparently the two lobes connected by the isthmus. The surface is irregular and nodular, but the capsule is intact except on the posterior surface where it was apparently freed from its attachment. The upper portion of the right lobe consists of an oval shaped gray colored firm mass of tissue measuring 4½ cm. in its longest diameter. The lower portion consists of a similar but spherical mass 18 mm. in diameter. Sectioning shows each of these masses to be enclosed in a capsule varying from a fraction of a mm. to 1½ mm. in thickness. The largest mass contains areas of clear gelatinous material interspersed with strands of tissue apparently connective tissue. The spherical mass consists of a gray friable material. Attached to the lower pole of the left lobe is a cystis mass 2½ cm. in diameter which on sectioning is seen to contain a thin brown fluid together with some very friable, dark brown material. The sectioned surface of the left lobe reveals two encapsulted masses, one ½ mm. and the other 2 mm. in diameter containing gray friable material. There is very little tissue in the specimen appearing as normal thyroid. Attached to the surface of the specimen at various points are small firm nodules measuring from 4 mm. to 6mm. in diameter containing material similar to that found in the larger mass as described above.

Microscopic description: Section showed the thyroid tissue to vary much in type. In some portions there is an adenomatous type of growth with a varying amount of colloid and considerable degeneration. In many areas the acini are widely separated by much degenerated stroma and the cells are separating from their basement membrane. In other portions the epithelium tends to be columnar and there is little colloid material and definite evidence of hyperplasia similar to that seen in exophthalmic goitre. Because of the two distinct types of pathology it is difficult to classify the gland. Since, however, grossly it consisted principally of the adenomatous type of goitre it is put down under that head.

Diagnosis: Adenoma of the thyroid, mixed type.

(Signed) A. J. Miller, M. D.

DISCUSSION

This case shows the futility of endeavoring to draw any conclusion as to the clinical condition of the patient by the examination of the gland and the findings on microscopic examination. In this gland there was practically no normal thyroid tissue. There were evidences of the hyperplasia associated with exophthalmic goitre. There were evidences of adenomatous change of the thyroid epithelium in all stages of degeneration. If microscopic changes in the gland have anything to do with governing the clinical symptoms this patient should have been in an advanced stage of hyperthyroidism whereas she showed practically none of the symptoms of that condition. In our judgment the condition causing the greater part of her symptomatology was the foul condition of her teeth and mouth and the thyroidectomy was performed rather as a matter of precaution for her future than because of any symptomatology of thyroid dysfunction existing at the time.

TREATMENT OF CHRONIC EMPYEMA—(NON-TUBERCULOUS)

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Eighth in a Series of Articles on Surgery of the Thorax.

It is not possible to outline a single method of procedure for the management of chronic empyema. A disease manifesting such variability in etiology and in pathologic anatomy must of necessity demand a great variation in the means of establishing conditions favorable to recovery. The treatment must not be formulated dogmatically and applied willy-nilly. Nevertheless certain principles of treatment offer the guide through which the treatment may be properly adapted to the patient.

THE CARDINAL PRINCIPLES

The cardinal principles in the surgical management of chronic empema are:

1. Avoid extreme surgical risks.
2. Preserve structure and function as far as possible.
3. Select reconstructive in preference to mutilating operations when possible.
4. Give conservative methods the preference when in doubt.

The causative factors in chronic empyema may be briefly set down as either inefficient drainage, foreign body, failure of cavity obliteration or tuberculous pleuritis. The direct approach to the elimination of one or more of these causes involves a group of operations which are graded in their severity and in the amount of surgical risk. A keen judgment and an accurate knowledge of the surgical tolerance based on a complete knowledge of the physiologic and anatomic pathology in the case under consideration is essential for the best results. An operation that carries a high degree of surgical risk is unwarranted. When the patient's condition is unfavorable the less formidable procedures should be selected and perhaps later improved conditions may permit the more extensive procedure if it is still indicated. Graded operations in chronic empyema is as essential as in pulmonary tuberculosis.

The series of operations which are to be considered in the management of chronic pleuritis arranged in the order of the severity of the operation is as follows:

1. Preliminary aspiration with irrigation by the closed method.
2. Simple open drainage.
3. Open drainage plus exploration of the cavity for foreign body.
4. Decortication operation.
5. Plastic operation.

Plastic operations may be subdivided into the following:

1. Estlander operation or simple rib-resection.
2. Rib-resection plus excision of the parietal pleura.
3. Plastic operation with muscle or skin transplant.
4. Extra-pleural thoracoplasty.

I. A PRELIMINARY ASPIRATION

A preliminary aspiration is necessary in all cases of chronic pleuritis. This is of the utmost importance, because of the necessity of determining the character of the fluid and the type of organism that is present. It must be emphasized in this connection that in case the organism is the baccilus tuberculosis no open drainage should be done. If the tubercle baccilus is demonstrated to be present, or if there is strong presumptive evidence of its presence as indicated by a sterile pus, and especially a sterile pus having a preponderance of mononuclear leucocytes, the treatment should be that as outlined for primary tuberculous pleuritis, which is repeated aspirations when necessary to relieve the pressure or aspirations with irrigations with some antiseptic solution. Recently the use of an iodine solution has been advocated by European authorities for irrigation for tuberculous pleuritis. If open thoracotomy is done in cases of tuberculous pleuritis, a secondary infection will take place and the probability of a later plastic operation will be greater. In the presence of a tuberculous pleuritis, however, without an association with other pyogenic organisms it is important to remember that if the visceral-pleura is not thickened, irrigation should not be done. In some cases of tuberculous pleuritis the visceral pleura remains thin and in such cases the use of an antiseptic solution, especially of Dakin's solution, may precipitate a rupture into a bronchus or give rise to hemorrhage into the pleural cavity. It is therefore inadvisable to use irrigation in the presence of a simple tuberculous pleuritis, unless the x-ray picture shows that there is a definite and decided thickening of the visceral pleura. If the latter situation is present irrigation can be done with safety. In the absence of tuberculous infection the use of an irrigating solution is indicated. The general condition will improve in from 50 to 95 per cent of the cases. The size of the cavity will be very much reduced and the fluid may be rendered practically sterile. If further plastic operation is necessary later the reduction in the size of the cavity will permit the selection of a less extensive procedure.

II. SIMPLE OPEN DRAINAGE

Simple open drainage is indicated in cellulitis of the chest wall, or for the removal of foreign bodies, in cases with osteomyelitis of ribs, and in cases in which there is a large bronchial fistula. In the latter group in which there is a large bronchial fistula, irrigation cannot be used by a closed method. It can be used however with an open operation even in the presence of a large bronchial fistula. The return flow of fluid is free and there will be less tendency for the fluid to pass over into the bronchial tubes and give rise to strangulation and cough. The presence of a foreign body will of course keep up indefinitely a chronic pleuritis. Sometimes the removal of such foreign bodies as a rubber drainage tube or portions of necrotic rib may be very easy and in other cases may be very difficult. However the foreign body must be removed if recoverey is to be expected. Following simple open drainage and the removal of a foreign body a series of tubes may be applied in the pleural cavity for irrigation with Dakin's solution or if no large bronchial fistula is present an air-tight connection may be made between the pleural cavity and the drainage tube in such manner that a closed system of irrigation and drainage may be carried out. In using either a closed system of drainage or the open thoracotomy the addition of Wolf's bottles will further favor the expansion of the lung and obliteration of the cavity.

III. DECORTICATION OPERATION

Decorticating operations are indicated when the failure of obliteration of the cavity is due only to lung-compression by thick fibrous capsule. Theoretically the use of a decorticating operation such as Lilienthal offers the nearest approach to a restoration to the normal anatomical condition in the thorax. However cases must be selected with great care for the use of decorticating operations. It should be attempted only when irrigation fails to promote recovery. It is strongly contraindicated in the presence of a cavernous tuberculosis of the lung, or if there is extensive fibrosis of the lung causing contraction. It is also very questionable whether a decortication operation should ever be performed in a case of tuberculous pleuritis. In most cases of tuberculous pleuritis in which it has been attempted it has failed to give good results. Also it is questionable if it is worth while to attempt to do a decortication operation in a small cavity. Usually not sufficient advantage is gained to warrant its use in such cases. In very many instances decortication is no longer indicated after a thorough course of irrigation treatment has been carried out. In the occasional case of non-tuberculous pleuritis in which there is a large cavity with compression of an otherwise normal lung by greatly thickened pleura this operation is ideally indicated. The Delorme-Fowler decortication operation is a more formidable one than the Lilienthal.

The technic of the Lilienthal non-deforming operation is given by the originator of the procedure as follows: "This method restores the lung almost to its normal capacity, while its danger is far less than that of the Schede, Estlander and Delorme operations. The operation consists in the approach through a long seventh interspace incision beginning behind the costal angle and extending almost or quite to the cartilage. From one to four ribs are divided upward or sometimes downward at the posterior angle of the wound, or very rarely upward at its anterior end in order to expose every recess of the cavity. A powerful automatic rib retractor is an absolute necessity in this operation. The lung, which will be found bound down by adhesions, is now liberated by incision through the confining membrane, which may be removed if there is an easily found line of cleavage and which otherwise may be loosened by numerous intersecting incisions. By intrapharyngeal insufflation the lung is expanded and it should reach the chest wall. Fine bubbling on the surface is of no consequence, but whistling means that a bronchus has been entered, an accident which should, if possible, be avoided. Drainage is secured through the original sinus enlarged for the purpose, the new surgical wound being closed by interrupted sutures of chromic catgut through the muscles, but without pericostal sutures. The skin wound is approximated by silk or silkworm-gut. The after treatment consists in dressings, irrigations and strenuous blowing exercises.

The indications for the Lilienthal operation are briefly set forth as follows: Patients with cavities and discharging sinuses persisting for more than two months after drainage for empyema and unsterilizable by the Carrel-Dankin Method, Lilienthal says, should be examined with the vertical fluoroscope. Those with large rigid cavities and profuse discharge are proper subjects for this operation, which may be described as a major non-collapsing thoracoplasty. Small cavities, when resisting other treatment, are also suitable for this form of thoracic surgery." In fact, the procedure described by the author should, he says, be selected in the cases in which it has been heretofore customary to perform major chest collapsing operations or the Delorme-Fowler decortication.

IV. PLASTIC OPERATIONS FOR CHRONIC PLEURITIS

Plastic operations to secure collapse of the chest wall are indicated in cases which fail to respond to a thorough course of irrigation management, or in cases in which there is extensive cavitation in the lung itself with intrinsic fibrosis and contracted lung, or in cases of tuberculous pleuritis. The least formidable operation in this group is that of Estlander. This consists in the removal of portions of one or several ribs with a view to rendering the external wall of the suppurating dead space elastic, and to allow it to be depressed and brought in contact with the collapsed lung.

The number and extent of ribs to be resected will obviously depend upon the size and space to be obliterated. The exposure of the ribs may be made by raising a single U-shaped flap of skin and superficial muscle or by making several horizontal incisions over intercostal spaces through each of which two ribs may be resected. The flat parts are pressed downward until firmly in contact with the lung and held in this position by pressure of the outside dressings until union has taken place. Estlander later modified the operation by removing the intercostal muscles aponeurosis and parietal pleura and advised scraping the pyogenic membrane from the lung surface. Estlander's operation is simple to perform and is little shock producing to the patient and effects a cure in a large per cent of cases. There is, however, a slower convalescence and a greater tendency to recurrence, following this procedure than the more extensive plastic on the chest wall.

SCHEDE'S OPERATION

This operation has for its object the obliteration of the larger cavities resulting from complete contraction of the lung. It is to be mentioned merely as one of the mile-posts in the progress of thoracic surgery since it is now an obsolete operation. It consists of the removal of the ribs, the second to the tenth or eleventh, together with the intercostal muscles, internal intercostal aponeurosis and the parietal pleura. It affects a complete collapse of the chest wall. The mortality is high and through the works of Brower, Freidreich, Wilms and Sauerbruch it has now become firmly established that as efficient and complete collapse of the chest wall may be induced by the para-vertebral extra-pleural thoracoplastic operation of Sauerbruch. This latter operation is less extensive, less shock producing and carries a much lower mortality than the Schede, and is to be preferred to it.

Plastic operations, including the removal of the parietal pleura, ribs enmass and with transplantation of muscle or skin to the visceral pleura, is indicated at times. When there is a fusion of ribs and multiple sinuses, the Sauerbruch paravertebral thoracoplasty may be impossible to carry out. In such cases a plastic operation of this sort with transplantation of soft tissues may be necessary. In some cases this operation may be combined to advantage with a visceral decortication. A 2 per cent solution of gentian violet, according to Hedblom, has proved of some value as a decorticating agent. At the same time it sterilizes the field preparatory to the plastic operation.

V. EXTRA-PLEURAL PLASTIC OPERATION

In large sterile empyema cavities which fail to obliterate because of thickened pleura and especially in cases in which there is cavitation in the lung or intrinsic fibrosis producing contracted lung or if the process is a tuberculous one the extra-pleural operation is indicated. One of the most interesting chapters in the progress of surgery and particularly thoracic surgery is the succession of work carried out by Braun, Friedreich, Wilms and Sauerbruch, eventuating finally in the working out of the comparatively simple paravertebral rib resection operation which induces a complete collapse of the thoracic wall without great shock and with comparatively low mortality. The technic and further discussion of the Sauerbruch thoracoplasty will be given in greater detail in connection with surgical management of tuberculosis.

BRONCHIAL FISTULA

One of the causes of chronicity in pleuritis is bronchial fistula. There is great variation in size of bronchial fistulae. Some are so minor as to give rise only to a slight taste of the irrigation solution as it is used in a closed irrigation system. These smaller bronchial fistulae usually close spontaneously without any special treatment. Larger bronchial fistulae do not close spontaneously or at least not readily. However, even large bronchial fistulae often eventually close after a persistent and long continued process of drainage and irrigation. Every bronchial fistula should be allowed months or years to give it a chance to close spontaneously. One should be very slow in closing them by operation. Sometimes a bronchial fistula is a safety valve for the lung and serious complications sometimes ensue after premature closure. An unexplained frequent complication of operative closure of bronchial fistula is abscess of the brain. Also they are apt to reopen spontaneously. In the case of large bronchial fistulae it is advisable to use the open method of drainage and irrigation. Frequently by following such a course of procedure the fistula will eventually close although it may be some months or years before this takes place. In case a plastic operation is performed for the obliteration of the empyema cavity, the bronchus may be closed by removing the thickened fibrous membrane surrounding the fistula, and suturing the walls of the bronchus or by muscle or skin operation. Further consideration of the treatment of bronchial fistulae will be given later.

HEARING DEVICES FOR THE DEAF

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Many times I have been approached by deaf persons who wanted to know what hearing devices had to offer them. The otologist is often so busy and interested in the diagnosis and treatment of diseases of the ear that this phase of the question has been neglected and has been taken care of by the manufacturer and the patients themselves. Otologists as a class have been slow to appreciate their obligation in these cases, for this is a legitimate problem, and so the matter has been largely neglected. The field is a rather extensive one as it involves social and economic problems as well as the important question as to what can be done to help the hearing of these sufferers.

In several cities of the country there are leagues of the hard hearing that are of considerable value to the afflicted as it is through these that advice is given about instruments to aid in hearing, and training in lip reading as well. All physicians should be interested in this work and every city should have an organization of this kind. The function of the otologist in such an organization should be to give advice about the various instruments as an aid to hearing. Many of these instruments are of value only in certain cases and many are a positive menace to those that are wearing them. Many of these are widely advertised and extravagant claims made for them that are hard to substantiate.

In attempting to classify the different devices it would seem that all of them fall into three classes and should be classified according to the mechanics involved in their make-up.

In the first class we have the so-called artificial ear drums. Such devices usually consist of a simple rubber disk that is inserted into the canal of the ear. This receiving device is of use only in exceptional cases, and in these a small plug of cotton wet in mineral oil will do as well.

The type of case that receives benefit from these is the one that has long suffered from chronic suppurative otitis media and in which there has been destruction of the ear drum and ossicles and which has affected both ears. The patient soon learns to push the rubber disk down to the remnant of the stapes and in this type of case it does do some good but not more than does the oiled cotton. If there is suppuration the disk does a great harm as it may act as a dam to retain secretions in the ear that should be allowed to escape. In all other types of deafness it does no good no matter what the advertisers may say to the contrary. The dam or cotton does vibrate some in the presence of sound vibrations and transmits these to the fragment of the stapes which in turn transmits these to the fluid of the cochlea.

The next class would include the ear trumpet and the speaking tube. Both of these are designed to work upon the same principle and that is to collect the sound waves and convey them to the ear. These are of use, in a way, in all types of deafness, as any ear that does not appreciate the sounds that come to it is made to perform better by some apparatus that will gather these sounds and present them to the ear in greater intensity. These are not in general use as they are cumbersome to handle and the deaf are somewhat inclined to be sensitive about their affliction and do not like to advertise the fact that they are deaf by the presence of an ear trumpet or speaking tube. In spite of these faults they are of the type that are liable to help most people who have poor hearing. Especially is this true concerning the obstructive middle ear deafness as well as those having primary nerve deafness, but it is the latter that receives the maximum benefit from this type of hearing aid.

The third class is represented by a type of instrument similar to the telephone in that it is activated by an electric battery and that the sound waves are changed to electric waves and intensified and then turned back again to sound waves at the patient's ear. A great deal of confusion exists among physicians regarding the usefulness of these instruments and concerning the type of deafness to which they are a benefit. Many physicians do not recommend them, while admitting that many of their patients get them and continue to use them with some benefit. As a matter of fact there are some very definite factors that are to be considered when one of these is recommended to a patient. They are of help to certain types of deafness and not to any others and they differ in this respect from the trumpet and speaking tubes that are of some help to most cases or to all types of deafness. Many people find this out only after a great deal of experimenting with different types of hearing devices. A man who is agent for devices of this kind has noticed this and is able in most cases to tell what persons are to be benefitted by his apparatus from the story they tell of their troubles, and without making any tests. For example, he has noticed that people that develope deafness after fifty years of age are not benefitted unless the disease had its onset much earlier in life, and had become severe later on in life. He had also noticed that persons who heard better when riding on the cars were generally benefitted. An analysis of his findings shows to the otologist the true types that are helped by the telephonic devices. Most deafness that developes after fifty is of the nerve type and it is in these that the instrument in question is least useful. The cases that are helped most are those belonging to the type of deafness known as obstructive middle ear deafness, including especially the cases of bony fixation of the stapes.

In this connection it may be wise to point out that a defect in hearing is always due to one of two conditions, either of which may be acting separately in particular cases, or both may be active in the same case. In the first place there may be some defect preventing the sound waves from reaching the nerve of hearing, as in an ear that is plugged with cerumen. Anything that prevents the sound waves from reaching the nerve of hearing will produce deafness, and this may be, as I have said, a plug of cerumen in the canal or any fixation of the tympanic membrane or of the ossicles. This includes several types of middle ear disease as well as the condition in which there is primary fixation of the stapes and which is the principal defect in most cases of hereditary deafness. The second cause for defective hearing is where the nerve of hearing fails to respond normally to the stimuli of the sound waves that reach it. This is called nerve deafness. The condition has very often been known to develop primarily or may follow long standing obstructive middle ear disease. In most cases there is little trouble in differentiating these two types of deafness unless there is a mixture of the two types and then considerable confusion is liable to exist.

Very rarely one sees a case of primary nerve deafness that is benefitted by an electric hearing device. Most of them are unable to get any benefit from them whatever due to the fact that in these cases there is but little bone conduction. It is in the cases of obstructive middle ear deafness where these devices are beneficial, and it is particularly in those cases of primary fixation of the stapes that they are especially useful, because of the necessity of some hearing device and on account of the good bone conduction that is generally present. Degeneration of the cochlea may take place later on and there may be many of the symptoms of nerve deafness, but the electrical device will continue to function as a result of the increased bone conduction from the fixation of the stapes. The part of the tone scale that is usually destroyed by the degenerations of the cochlea are those at the upper part of the scale and it so happens that these tones are not made use of in ordinary conversation. The lower part of the scale is usually preserved to the end so that these people get good results from their hearing device even in the presence of considerable pathology in the ear.

To many of these sufferers, and they are all of that, the advent of a device that will improve hearing is a very great help. Many times it means holding a position and carrying on, and supporting a family, against loss of position and accepting charity. In view of this it seems to me that it is the duty of all physicians to be informed on this subject so that the proper advice may be given to these people.

GENERAL ANESTHETICS*

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General Anesthetics may be defined as drugs which produce paralysis of the higher centers of the brain and unconsciousness without producing any permanent toxic effects. There are numerous drugs which may be used for general anesthesia but some have properties which are deemed unfit.

According to Hewitt, the chief properties which a substance must possess in order to be suitable for the production of a general anesthetic are the following:

1. It must paralyze the higher centers of the brain and produce unconsciousness; it must also depress the lower centers of the brain sufficiently to prevent sensory stimuli producing reflex movements of voluntary muscles.

2. The vital centers in the medulla must not

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*Read before the Nebraska Association of Medical Women, Omaha, November 2, 1929.

be depressed, especially the respiratory center. Any substance which paralyzes the higher centers of the brain will paralyze the medullary centers if given in excess. A substance can only be used safely when there is a reasonable margin of safety between the amount which produces anesthesia and that which paralyzes the medulla.

3. It must not injure or unduly depress other organs than the brain and must not act as a cardiac depressant.

4. The action of the drug must be such that it can be easily controlled by the anesthetist. This is important. (1)—to avoid overdosage, and (2)—that the anesthetist may be able to vary the length and depth of the anesthesia, according to the requirements of the surgeon.

5. The action of the anesthetic must be completely reversible and must not produce any permanent injurious effect upon either the brain or other tissues.

6. The administration of the anesthetic must not produce undue discomfort or violent excitement.

7. It should not cause undue nausea or vomiting as an after effect. Whenever possible, it is better to induce anesthesia fairly rapidly and have the action of the anesthetic terminate so soon as possible, after its administration has ceased, also that the depth of the anesthesia may be modified to suit the existing conditions and circumstances.

I will mention a few of the leading anesthesia substances being used at the present time. Chloroform is used in some countries and when indicated, in this, but not generally. Ether is most extensively used, always will be and has a place entirely its own. Since it is so generally used, I shall mention but a few factors. Preliminary to any general anesthetic, except in small children, I prefer a hypodermic of morphine from a half to three-fourths of an hour before the operating schedule. After the hypodermic is given, the patient should not be disturbed, but left alone. They come to the operating room in a more quiet, subdued manner, not so frightened, nervous and alert. The unusually nervous patient, or any patient, who is unable to sleep the night previous to operation, should be given a sedative to produce sleep and rest to better prepare or have them fit for the operation. If the anesthetist tries to gain the patient's confidence and succeeds, a better anesthetic is taken. With the ordinary individual the induction is important. Plenty of air, the mask sufficiently removed from the face. Although I seldom use it, the cone mask will aid in producing a more rapid induction and less ether during operation. When a preliminary dose of morphine is given, less ether is required when once asleep.

The depth of anesthesia depends upon the pathalogy present and the relaxation required by the surgeon. The patient should be awakening when taken from the operating room. Whether the patient has much post-operative nausea and vomiting will depend to some extent upon the evenness and smoothness with which the anesthetic was given. Ether should be given by the drop method. With an anesthetic which has the quality of the relaxation of ether, it is regrettable that most people must go through the discomfort of the induction period, and the post-operative nausea and distress. Ether lowers blood pressure, is liable to produce irritation of the respiratory passages, is a slight depressant. It is not according to Hewit, a cardiac stimulent and causes a diminished kidney output which is increased following the recovery period. No serious metabolic disturbance is noted.

Ethyl Chloride has its advantages. For a long period it has been used for short anethesias. Its depressing effects cause its contra-indication for major work. For short, minor cases, on account of its rapidity of action, both in producing anesthesia and awakening, the much more pleasant odor for induction and the less nausea and vomiting following, is in its favor. As an induction to an ether anesthetic, it comes only second to Nitrous Oxide-Oxygen, on account of the ease of handling, and expense. The past two years I have used it extensively, in various typed individuals, some who were the most difficult patients to handle, others who had had previous ether anesthetics, were frightened, nervous, and in dread of the smell of ether. With ethyl chloride they were easily handled and controlled, and later expressed to me their pleasure at being given something which was so much more agreeable and pleasant to take. I use it almost routinely, except in the struggling, fighting child to whom I cannot talk.

Since 1913 we have heard much concerning Ethylene Anesthesia. In some localities much is being used, some less, others have disregarded its use and in still others but in its infancy. Ethylene, like ether, absolutely must not be used where a cautery or open flame is in use, or where electric motors are used. When the first reports from the Presbyterian Hospital of Chicago were given they included especially picked cases. I will quote from an article in the *Current Researches in Anesthesia and Anelgesia* of December, 1927, written by Dr. Herb, chief of the Anesthesia Staff at Presbyterian hospital on ethylene. She claims its use in many thousands of cases since the original 500, and that they have given it without immediate or after ill effects to patients suffering with the various severe cardiac conditions, arterio-sclerosis, high blood pressure, diabetes, acute and chronic respiratory infections and obstetrics. When she does not secure proper relaxation with ethylene she adds ether, and when the relaxation is obtained, again resorts to the gas. She does not use preliminary medication. She claims ethylene superior to nitrous oxide in that it produces better relaxation and because sufficient oxygen can be given with it to prevent cyanosis. I might state, that with ethylene you do not get the cyanosis as in nitrous oxide, but more of a pink hue. Even at best, ethylene does not produce the relaxation which is obtained by ether. Post-operative, there is not the vomiting as with ether. Ethylene does not irritate the respiratory tract, does not depress respiration, circulation or kidney function. Not using ethylene, I can but tell you of the experiences which others claim for it. At the University of Iowa Hospital, it is used very extensively; especially with orthopedic cases who require repeated anesthetics.

During the past five years I have given a considerable number of nitrous oxide-oxygen anesthetics. With the proper technique and apparatus, I know it can be used for almost any kind of surgical work. The youngest patient was six months, and my oldest eighty-one years. Some anesthetists give it to children routinely. I have used it for all manner of cases, thyroidectomies of the worst type, cholecystectomies, appendectomies, pelvic work of all kinds, hemorroids, nephrectomies, prostatectomies, fractures, mastoids, amputations in diabetics, caesareans, and normal obstetrics. In nitrous oxide as with any other anesthetic, as ether, rectal or local, one has an occasional failure. Many of these cases I have carried through on gas and oxygen alone, some from a half to two hours. In a few difficult cases there was an infiltration of novocaine, which assists in relaxation, the combination being an excellent one. Whenever I find a case which cannot be relaxed with the gas, I do not hesitate to switch in a few breaths of ether, for, unless absolutely contra-indicated, the ether is eliminated long before the patient awakens. It may take but a few minutes to get the patient anesthetized, but it may require ten minutes to get the proper relaxation for surgical measures. During this period the patient should be prepared, and all articles ready for the operative work. So far as the risk is concerned, all depends upon the patient, surgeon and anesthetist. Nitrous oxide, as ethylene, cannot be given by one who is not experienced, for all the signs of anesthesia must be closely guarded, the various kinds of respiration, the pupillary reflexes, pulse, the color, and blood pressure readings. It keeps you alert every second, as you may need to vary your anesthetic in order to cooperate and anticipate the needs of the surgeon. The disadvantage with any gaseous anesthesia are the facts that there is need of a machine, a trained anesthetist, frequently lack of relaxation, and the expense connected with the substance used.

The gases are so much more pleasant to take, the induction period is shorter, a few breaths, and the patient is unconscious. Ethylene does not have quite so pleasant an odor. Usually the patient regains consciousness quickly following the removal of the mask, may vomit once, or, not at all, therefore there is less gastric irritation. So far as the patient is concerned, this is sometimes a big factor. The gases do not require hours of elimination. I have not been able to find information in regard to blood findings. During nitrous oxide oxygen anethesia there is some increase in blood pressure which drops to normal as soon as the patient awakens. There is no stimulation of the circulation, the pulse may be more rapid upon induction but then quiets down and remains about the same during the operative period. There is no respiratory irritation. There is some sweating, but not so much as from ether. The cyanosis depends upon the amount of nitrous oxide required but there may be some, also depending upon an unobstructed air passage, as with any other anesthetic. In obstetrics, with a patient who will cooperate it is ideal and I've had occasion to use it in those to whom ether has become very repulsive, and in one case whom I had in bed for several months with a severe cardiac lesion. On account of the pulmonary conditions, also kidney, she developed an anuria, and oedema, all secondary to the existing cardiac condition, and I gave her a nitrous oxide oxygen anesthetic. Ether would have been most detrimental to her, and she was delivered of almost a full term baby. These parents are most happy over this little girl, while the mother's condition is little changed since this cardiac condition developed in childhood from an acute infection. Surgical technique varies to a certain extent in gas anesthesia, as with local.

Carbon Dioxide is being used more, as it is such an excellent respiratory stimulent. It is used during an anesthesia to stimulate respiration, also after an anesthetic to awaken the patient, as they more rapidly eliminate the ether. It is also being used in a medicinal manner, to treat mental cases. This is still more in an experimental process, although the results seem to be encouraging.

Before closing, I wish to mention the subject of Amytol. It was the subject of much discussion at the recent anesthesia session held in Chicago, October, 1929.

Amytol is a preparation of the barbiturates, and is being used for narcotic, hypnotic and anaesthesia purposes. The hospitals in Indianapolis, also Rochester, have been using this drug extensively. Some of us have been using amytol preparations orally, but this preparation is put up in ampules and used intravenously. Man seems more susceptable to it than animals as he requires smaller doses.

In giving amytol, the patient's color is normal, respirations may be decreased, pupillary reflexes the same, usually no excitement stage. The drug should be given in the patient's room and slowly. It decreases blood pressure which usually again soon rises. One c.c. per minute of the solution and ten grains is the usual dose, (larger doses caused too much excitement and they slept too many hours afterwards), although fifteen and twenty grains are given for major work. When first used larger doses were given but now small doses supplemented with nitrous-oxide oxygen seem best. Pre-medication is used as in any surgical case. It is claimed these patients fall into a quiet sleep in two to five minutes. This subject was thoroughly discussed, and those who had used it were strong advocates but all wished it impressed that Amytol was a narcotic and hypnotic and not an anesthetic, although it is being used without any supplementay anesthetic.

For non-surgical cases it has proven most efficient in convulsions of tetanus, strychnine poisoning, it appeared a specific ingastric crisis, pernicious vomiting, rabies, asthma, delirium tremens, epilepsy, renal colic, gallbladder colic, migraine, eclampsia and all cases which could not be controlled by large doses of morphine. It seems the drug has the ability to relax where morphine fails. It is absolutely contraindicated in arterio sclerosis, hypertensions, and bronchitis.

A DISCUSSION OF RHEUMATISM IN CHILDREN AND ITS SEQUELAE*

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Let me state a few mortality figures to remind you of the importance of rheumatism in children. Heart disease has come to be the greatest single cause of death in the United States, the reason being that of all serious and ultimately fatal diseases those of the heart are of longest duration. 10.9% of all deaths are cardiac. Rheumatic fever and chorea cause 95% of cardiac disease in children. It is estimated that for the British Isles 30,000 deaths occur each year from rheumatic disease contracted in childhood.

The types of arthritis will receive brief mention. Acute arthritis includes acute purulent synovitis, acute epiphysitis, pyemia of bone, and acute osteomyelitis. The acute arthritis of infants is essentially a disease of the first year, and is more common in the first six months of life. It is due to pyogenic organisms entering through the cord or the mouth. The offending organism usually being streptococcus, staphyloccus, gonococcus, or pneumococcus. There are no ocular nor genital involvements in many of the gonococcus cases. In contrast to gonorrheal arthritis in adults, the tendency to affect small joints is striking.

Acute rheumatic fever is so rare at the age of one year and under that it may be excluded when making a differential diagnosis. Chronic polyarthritis, or Still's Disease, is a condition in which a large number of joints are involved symmetrically, runs a very chronic course, without tendency to suppurate. Not much is known of the etiology, although it is thought to be a general infection; rarely can a focus be found. Crippling may go on for months and years without much change in health. Spontaneous arrest of the disease usually takes place with almost or complete recovery. No case, therefore, should be considered hopeless. Most cases of chronic arthritis are of tuberculous origin, occasionally syphilis, and they may arise from acute articular rheumatism. Other causes of rheumatism may be trauma, Legg's or Perthes' disease, and anatomical deformaties or posture. Tonsillitis, sinusitis, pyorrhea alveolaris, root abscess, various exanthemata, diphtheria, and typhoid localizations, pyelitis, cholecystitis, and even colitis, are unquestionably the primary cause of much that is called rheumatism. The toxins from these strains of infections produce in varied form all of the classical symptoms which the word rheumatism implies, and the clearing up of such infections clear up the symptoms. Just as asthma, acting as a response to a great variety of foreign proteins and bacteria, so the clinical picture of rheumatism and acute rheumatic fever may be a response to a number of different stimuli. Rheumatic fever attacks children and young adults. It is characterized by high fever, profuse sweats, swollen and exquisitely painful joints: sometimes affects the heart, and possibly before or after the acute stage St. Vitus dance or chorea occurs. One writer states that it is probably a chronic progressive infection, which may remain latent for years, recurrences being characteristic, but these may be long postponed. The joints recover.

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*Paper prepared by a Senior medical student for evening class meeting, Department of Pediatrics, Creighton University, School of Medicine.

Faulker and White found that families of rheumatic patients are more than twice apt to have another member with a rheumatic infection, as families of non-rheumatic persons. Dr. Reginald Miller on the Committee of Investigation appointed by the British Medical Association, reported that the disease in England is essentially one of children of the artisan class, living in damp rooms, attending an elementary school, and suffering from tonsillar sepsis. Through the examination of a large number of school children it was found that chronic tonsillar enlargements were no more frequently found in the rheumatic than non-rheumatic children.

Drs. Swift, Derrick, and Hitchcock of New York, did considerable experimental work on the allergy to streptococcus in its relation to rheumatic fever. Their theory was that the general body reaction in rheumatic fever is allergic in nature probably to the streptococcus. They found that the only organism with any degree of regularity was the non-hemolytic streptococcus, and strains of these differed culturally, and morphologically. These men also found that a focus is necessary to produce a state of allergy, and that the patient does not improve until the focus is removed. Attempts have long been made to isolate a specific organism causing acute rheumatic fever. Numerous organisms from the John Doe bacillus on up have been declared specific offenders. Experimental studies have been made by Small, Birkhang, Clauson, Poynton and Rosenow, with different specific organisms reported. Dr. Swift, who, perhaps has done more research in this line than any one else, recognizes more than one cause, and says regarding the results of these other men that the organism found was the exciting cause in their cases.

The important thing for us to remember is the frequency of the syndrome and the ease with which it may be recognized in a fair percentage of cases. Children especially prone are unstable, mentally, and bodily. Often they have symptoms of asthma, headaches, digestive disturbances, and obscure ailments. Many times there is a pale, waxy skin, with red cheeks. Sweating may be profuse in patches, while other parts are unduly dry. Twitchings, constant fatigue, unwillingness to play, irritability, indicate the insidious onset or actual presence. Pains in the limbs are common, occasionally there is slight amount of fever in the evening. The patient is slightly anemic, appears "out of sorts", is disinclined to play and run about, due to shortness of breath. Choreic twitchings or St. Vitus dance may be evidenced. Warnings of chorea are, unusual nervousness, disturbed sleep, fidgety movements, and a tendency to drop things. Rheumatic attacks of all sorts often start with a sore throat. A sore throat in a rheumatic child is always a dangerous symptom. The symptoms are less than in adults, resulting in their condition not causing alarm to the parents, and often times not attracting recognition by the physician. The disease is rare before the fifth year and increases up to the twelfth year, when it becomes less frequent. Growing pains are most common in the years from eight to ten. The heart affections are greatest at twelve years, then they begin to pass off. Grains or nodes above the ulna and over the spine are frequent findings of early rheumatism. They may be felt beneath the skin and vary in size from pin head to split pea. These bodies are aggregations of fibrous tissue.

Dr. Eric Pritchard made a clinical observation which is interesting. He says that in the young child, rheumatism takes the form of tonsillitis and chorea, in the adolescent, endocarditis, and myocarditis, in the adult pleurisy, synovitis, arthritis, neuritis. In general the defense in early childhood rests with the lymphatic system and the armies of leucocytes; in older individuals with connective tissue cells and possibly with endothelial cells. The symptoms resulting from the calling into play of these special lines of defense explain the special character of the clinical picture.

Cardiac complications are so frequent in rheumatic conditions of children that we should immediately think of the heart and guard it carefully. Formations of fine wart-like rheumatic conditions of children that we nodules upon the margin of the valves at the line of closure and also upon the chordae tendinae are the lesions of the endocardium. Recent demonstration of fine vessels in the free margins of the valves and tendinae shows the possible explanation of this phenomenon to be due to lodgement of the virus in the terminal vessels. The endocardium is not attacked alone, but the whole heart, and the result is carditis. Perhaps the most rational explanation of choreic symptoms is the presence of focal areas or encephalitis, and at times, the involvement of the meninges.

Eighty per cent of all heart diseases are due to general infections, of these 60% are due to rheumatic infections, 20% to focal infections, 20% to lues. The remaining 20% due to chemic poisoning. Two-thirds of the rheumatic heart infections are contracted between the ages of five and fifteen, which should impress every physician practicing pediatrics.

The sequelae of rheumatism depend upon the type of arthritis and the causative factor. Ankylosis, metastatic abscesses, and flail joints are feared in the suppurative type. Gonorrhea and syphilis attack different portions of the heart. It is possible for most any organ to be damaged in acute rheumatic fever, owing to a bacteremia and infectious emboli after cardiac involvement. The complications other than of the heart and brain are generally not great. Hyperpyrexia may require attention. Pneumonia is to be guarded against.

Salicylates apparently act as specifics in some cases of rheumatic fever, in other cases they seem to shorten the illness and lessen the complications, while in a few instances there is no appreciable effect.

No one will deny that a great deal has been accomplished in the warfare on tuberculosis by the crusades against the disease, through education of the laity and prompting the profession. We hear of the pre-tuberculous child. Many sanatoriums exist so that proper treatment and further study can be undertaken. Since rheumatism is not less important than tuberculosis, we may anticipate an active campaign against the disease, hear of the pre-rheumatic child and realize sanatoriums for the proper management of rheumatic patients.

In summary it seems to me that in the near future it will be very well for us in treating children, to give attention to aching muscles, growing pains, care of neglected decayed teeth, and removal of foci of infection. Repeated careful examination must be made of the heart, subsequent to any acute infectious fever. These examinations to be made to determine the extent of the damage if any, to the heart and its ability to carry on under normal living conditions or extra strain.

Finally according to Townsend, we can say there is no field of preventive medicine that presents so wide a scope for avoiding time lost from illness and actually prolonging human life as a very deliberate consideration of the facts regarding the cause of rheumatism and its aftereffects in children.

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PARAGANGLIOMA IN SUPRARENAL MEDULLA WITH NEUROFIBROMATOSIS*

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A paraganglioma is a rare tumor composed of chromaffin cells, most often met with in the suprarenal medulla and the carotid gland. In 1915 Harbitz(1) could find only about fifteen such tumors recorded, mostly since 1909. In 1925 Zeckwer(2) reported a single case and could find only twenty-five such cases reported. Rabin(3) recently reported a single case and was able to collect but thirty others up to September, 1928. Most of the cases were in the foreign literature.

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Paragangliomata of the suprarenal are usually small tumors which occupy most of the medulla and compress the cortex, without giving rise to symptoms. These are found only at autopsy in elderly persons and not infrequently are associated with neurofibromatosis. Moreover, they are apparently always benign. Histologically in these tumors large epithelial-like cells, many of which contain adrenalin and are brown after fixation in chrome salts, are the dominant element, although other less highly differentiated cells are present. The chromaffin cells tend to arrange themselves in heaps or cords, while multinucleated cells, giant cells, and vacuolation are not uncommon.

The rarity of this condition leads us to report the following case, the only one observed in the last 925 autopsies at St. Joseph's and Douglas County Hospitals.

A white man 56 years of age, complaining of weakness of four months duration, and chronic constipation, entered the Douglas County Hospital February 16, 1927, on the service of Dr. M. C. Howard. The only important item of his past history was an operation at St. Joseph's Hospital two months previous for the relief of pain of two years' standing in his right lumbar region. The pain had radiated anteriorly beneath the costal margin and down into the groin, and had been associated with some frequency of urination. Two years before the pain had been transitory, but for two months before the operation it had been continuous. The physical examination while at St. Joseph's Hospital revealed neurofibromatosis, a large palpable mass in the upper right quadrant below the costal margin, kyphoscoliosis to the right, pyorrhea alveolaris, and enlarged tonsils. The blood and urine findings were essentially negative, while gastric analysis revealed a total acidity of twelve. Exploratory operation on Dec. 3, 1926, by Dr. F. J. Schleier revealed a large gray-yellow mass behind the peritoneum and obscuring the right kidney. Enough of this tissue to fill a quart jar was removed and was diagnosed histologically (B.C.R.) as a "polymorphous cell perithelial sarcoma, retroperitoneal, probably derived from a neurofibroma". His wound healed but his course was progressively downhill. He left the hospital for his home Febr. 14, 1927.

On admission to Douglas County Hospital the diagnosis of von Recklinghausen's disease was confirmed by the presence of many nodules on the skin of the chest, back and extremities. There was a rather marked secondary anemia and trace of albumen in the urine.

On March 13, he developed symptoms of an acute respiratory infection and the physical signs of a lobar pneumonia. He died March 16, 1927.

Anatomic Diangosis (B.C.R.)—Acute lobar pneumonia, upper lobe of each lung and lower lobe of right; sarcoma, retroperitoneal, right lumbar region, extending into the right side of pelvis; von Recklinghausen's disease, with neurofibromata of the skin, mediastinum, and urinary bladder; paraganglioma of left suprarenal gland; recent healed surgical incision, right lumbar region; colloid adenoma, right lobe of thyroid; embalmed body.

Necropsy—Over the neck there were several small papillary tumors averaging five mm. in diameter. On the back there were similar projections up to one cm. in diameter, while in the skin over the abdomen and the posterior surface of each thigh there were a few similar nodules. Above and to the right of the bifurcation of the trachea there was a large, opaque, gray mass, which on section resembled the tumor nodules of the skin. The right kidney was small and pushed up by a retroperitoneal mass, which crowded the hepatic flexure of the colon forward and extended behind the peritoneum downward over the brim of the pelvis. This mass was soft, gray-red, necrotic and hemorrhagic. It encroached upon the right side of the inferior vena cava, and pushed the right iliac artery ahead of it as it extended over the pelvic brim. The right ureter ran along the inner aspect of the tumor mass, which reached to the margin of the recent surgical incision in the right lumbar region, and extended along the ilio-psoas muscle to below Poupart's ligament, filling up the right iliac fossa. In the medulla of the left suprarenal there was a gray nodule about one and a half cm. in diameter, roughly spherical and apparently replacing practically the entire medulla.

In paraffin sections through the whole thickness of the left suprarenal, the medullary portion is occupied by large epithelial-like cells, growing diffusely and held in place by a very thin stroma carrying capillaries. The cells are large, polygonal, and in places of giant proportions with several vesicular nuclei piled up irregularly near the center of the cell. In many of the cells there is an abundance of brown granular pigment. At the junction of the tumor mass and cortex was found a region of compressed cells resembling ordinary medulla and separated from the tumor proper by a thin strip of collagenous fibers. A few scattered deposits of calcium were observed. In some of the large tumor cells there are large vacuoles surrounded by granular deposits of calcium and in the center of several of these vacuoles there are eosinophilic, homogeneous bodies. In sections stained with Mallory's Phosphotungstic-acid Hematoxylin stain, no neuroglia-fibers are found. No nerve fibers are present.

Similar paraffin sections made from other tissues revealed the following: normal spleen; slight arteriolar changes of the kidneys; lobar pneumonia, gray hepatization; normal liver; thrombosis, left ventricle; neurofibroma of skin of arm; atherosclerosis of aorta; polymorphous cell sarcoma, retroperitoneal; spindle cell sarcoma in the neurofibroma of the mediastinum; prostatitis, chronic; fibroma of urinary bladder; colloid adenoma of thyroid.

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ORDERING EARLY

A little chap of six or seven, having fallen and broken his leg, it was decided that he should be taken to a hospital.

"Must I go to a hospital?" he wailed as the doctor was lifting him into the ambulance.

"Don't worry," said the doctor, "the hospital is a nice place and we'll soon fix you up."

"But, doctor, if I have to go to a hospital, I don't want a baby—I want a pup."

DERMATOLOGIC CLINICS

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Case 11. A farmer, 29 years, strong and apparently in perfect health. Seven weeks ago a swelling appeared extending over the whole of his right cheek. He consulted his physician who, considering it an infection from an upper molar, had the tooth extracted and ordered hot wet fomentations applied continuously. The inflammatory oedema subsided down to a circumscribed lump about three inches in diameter, bulging out about ½ inch in the middle of the cheek. This became hard as a board and remained so up to the present time. No fluctuation took place, no pus appeared and no pain was felt at any time. The jaws became contracted more and more, until now the patient cannot open his mouth more than ½ inch. He has no fever and except for the local inconvenience feels well. The Wassermann test is negative, and the blood count shows a leucocytosis of 17,000.

The clinical features are unusual and a diagnosis is rather difficult. At the beginning a cellulitis was thought of, but the swelling would have been painful and would have softened and broken down in a short time. A new growth, fibro- or osteo-sarcoma, might be present, but the rapid onset, the failure of periostal and bone involvement, as shown in the x-ray pictures, and the absence of enlargement of the glands, do not support such a diagnosis. A firm, circumscribed, persistent tumor, appearing rapidly with no signs of malignancy on the cheeks, jaws or the neck, especially in people who come in contact with cattle arouses a suspicion at once of actinomycosis or "lumpy jaw". The diagnosis depends on the demonstration of the ray-fungus, but the difficulty in this case was that there was no pus or other material at first in which to demonstrate the specific organism. The clinical feature of a solid thickening, also, though common in cattle, is unusual in human beings. The picture of actinomycosis as we have it in mind is a gradual undermining of the tissues with formation of sinuses and fistulae, totally lacking here. Two more upper teeth, a molar and a bicuspid which were found dead were removed and eventually, a deep incision in the lump revealed a focus of pus which contained small round yellow bodies. These are pathognomic of actinomycosis and are clumps of the actinomyces fungus. The name ray-fungus is also used, due to its peculiar arrangement in which slender sinuous mycelia with bulbous or "club-like" tips are radiating from a common centre like stars. The pathological changes are a growth of new connective tissue.

The infection may be carried from animals to man. More often it is acquired from food and foreign material conveyed into the mouth. The usual entrance is through carious teeth. The mould is supposed to occur on grains and straws and the chewing of these is responsible for some infections. Our patient has the habit of chewing kernels of corn and this with his decayed teeth suggests the mode of his acquisition of this disease.

The process is, as a rule, slow and in some instances continues indefinitely. The prognosis must always be very guarded because if the organisms are carried through the blood stream into some internal organs, the condition becomes very grave and generally fatal. A complication with pyemia is also serious.

Formerly operative measures were always employed, but remedies at hand which have at times good results should be given a trial first. We will put the patient on potassium iodide, rapidly increasing the dose to the point of toleration, combined with x-ray treatments, and watch him carefully for new developments.

ANTERIOR PITUITARY HORMONE IN BLOOD DURING PREGNANCY

A study made by C. F. Fluhmann, San Francisco (*Journal A. M. A.*, May 25, 1929), to obtain some information regarding the presence of hormones, and particularly the anterior pituitary hormone in the blood of pregnant women, and to note the changes set up in the genital organs of immature female white mice following the injection of human blood serum. The reactions found in the genital organs of immature white mice following the injection of blood serum from pregnant and nonpregnant patients may be classified in three groups, those attributed to the effects of a hormone from the anterior pituitary gland being considered the most important. One hundred patients were examined. Forty-eight represented normal pregnancies, and of these two gave negative results, eleven showed the presence of ovarian hormone alone, and thirty-five were positive for anterior pituitary substance. Of fifty-two controls, two patients showed ovarian hormone, and six anterior pituitary hormone. Of the latter, four were patients with either an operative or a radiation castration, and two had a functional amenorrhea.

"All men are born free and equal.
Then they go and get married."

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THE ANNUAL MID-MAY MEETING AT LINCOLN

The annual meeting at Lincoln, May 13, 14, 15, is history and history of one of the most profitable meetings ever held. The registered attendance was 389, which owing to heavy rains and flooded streams west, was quite remarkable.

Keen interest in the program was manifest from the beginning to end with the expected result that the audience remained with the speakers throughout the sessions.

The guest speakers were Dr. Isaac Abt, Chicago, "Sepsis in Infancy and Childhood"; Dr. Arthur E. Hertzler, Halstead, Kan.,—the Will Rogers of the medical stage—"A Country Doctor Looks at Female Complaints"; Dr. Emil S. Geist, Minneapolis, Minn., "Fractures of the Lower Extremity with Special Reference to the Boehler Treatment"; Dr. George Fahr, Minneapolis, "The Significance of the Systolic Murmur"; Dr. Jabez N. Jackson, Kansas City, "Requirements of Operative Technique in Cancer of The Breast".

The House of Delegates performed service of outstanding importance. "Fraud by Air" was thoroughly ventilated and action taken by the House to make our impress felt before the Federal Radio Commission. A By-Law was passed establishing a Medical Student Loan Fund, available to worthy, needy Nebraska medical students in the junior and senior years, beginning with $500, and creating a committee to administer the fund.

The House by unanimous vote adopted a resolution endorsing Dr. A. C. Stokes, Omaha surgeon, for the office of regent of the University, from the second district. The need of a medical man on the board of regents is keenly felt by the profession and Dr. Stokes is well fitted for the place.

A First Aid squad of the Lincoln Telephone company gave a marvelously clever 30-minute demonstration of first aid work before the general sessions.

Dr. Lucien Stark, Norfolk, was elected president-elect without any opposition whatever.

The annual banquet was one of unusual interest. Immediately following the dinner the first presentation of the Noguchi medal of the Phi Delta Epsilon, Alpha Chi chapter, of the Creighton University College of Medicine was made by Dr. Victor E. Levine, conferring the medal upon Dr. E. R. Hays, Falls City, chairman of the public activities committee of the Nebraska State Medical Association, who by outstanding work in health education and public welfare activities has advanced the cause of preventative medicine.

Dr. Karl S. J. Hohlen delivered the presidential address, developing his theme around the cost of medical care.

Several special stunts were presented on the floor and the evening ended with a grand ball.

There were about a dozen commercial exhibits, mostly x-ray and medical specialties.

RELATED MEDICAL ACTIVITIES OF THE WEEK IN LINCOLN

Until very recent years an annual meeting of the State Medical Association meant a formal program of several days of the State Medical Association, ending in a banquet. Nowadays an annual meeting is a part of a medical activities week chock-full of clinics, meetings of organizations allied to medicine, and health education of the lay public, to the benefit and convenience of all.

State Medical week at Lincoln this year opened Monday, May 12, with a day of clinics celebrating the opening of a new wing to the Bryan Memorial hospital—which now has 100 beds—with a full program presented by out-of-state medical celebrities, covering the subjects—Arthritis, Minor Surgery, Obstetrics, External Otitis and Tuberculosis of Children. Outstanding observations made at the clinics were that

Colles' fracture, due to transmitted force, is frequently accompanied by injury to the shoulder which results in a periarthritis of the shoulder joint. The treatment is rotary passive motion, under general anaesthesia, directed to the point of the shoulder, said Dr. Emil Geist of Minneapolis. Dr. Frederick Christopher, Chicago, believes iodine the best of all sterilizing agents. He stated that lumbar puncture is the first indication in electric shock resulting in unconsciousness. Dr. M. P. Urnes, Chicago, gave an obstetric clinic featuring eclampsia, with the aid of moving pictures. Dr. Marx White, Minneapolis, gave a heart clinic of unusual interest.

The Nebraska Tuberculosis Association had an all day meeting, May 12, climaxed by a banquet at the University club. The principal speaker was Dr. J. A. Myers, president of the Minnesota Public Health association, who brought the message that while the tuberculosis toll has been reduced 60,000 annually, much educational work needs to be done among the laity to compel fuller cooperation in seggregation of the afflicted and that treatment be instituted at the earliest possible moment. Dr. F. H. Heagey, Omaha, who recently succeeded to the presidency, was reelected president.

The Nebraska Association of Medical Women met on the afternoon and evening of May 13, had a program of three numbers, and a buffet dinner at the residence of Dr. Inez C. Philbrick. Dr. Philbrick gave an after dinner talk on "How to Recognize a Quack". Dr. Kathleen Sullivan, Omaha, was elected president.

Health Week was celebrated in Lincoln under the direction of Dr. E. R. Hays, chairman of the public activities committee of the Nebraska State Medical Association, by short talks by visiting physicians on various subjects related to health, before 26 organizations—churches, high schools, luncheon clubs, and business men's clubs and a tremendous amount of good must result from the dissemination of correct information in this way. The following subjects were discussed at the meetings: The Romance of Medicine; The Path of Happiness; Maintenance of Health; The Natural History of the Modern Doctor; The Responsibility of the College Graduate in the Health Program of the Community; A Few Things We Know about Cancer; Exercise and Rest; Keeping Fit; The Physician and the Public; School Health; Some Remarks on Choosing a Doctor; Is the Doctor Worthy of his Hire?; Pounds of Prevention; Health Suggestions; Control of Contagious Diseases; Care of the Skin; Sinus Trouble Complex; Consideration of Preventive Medicine; Anesthetics—Old and New; The Rules of Health; Weeds and Some of their Effects upon the Human Body; Social and Economic Aspects of Mental Hygiene; Lengthening Human Life; Good Health and Good Looks.

The Nebraska Academy of Ophthalmology and Otolaryngology held its annual meeting and banquet on the evening of May 12. Dr. Ralph A. Fenton, Portland, Ore., was the guest of honor and spoke on Internasal Ethmoid Surgery. Dr. A. E. Gadbois, Norfolk, was elected president.

The Woman's Auxiliary to the Nebraska State Medical association had a successful meeting and a number of enjoyable functions. Mrs. Morris Nielsen, Blair, was elected president-elect.

REST AND RELAXATION

In this large scale civilization we have organized and systematized work and recreation. We have yet to organize and systematize methods for relaxation. We need less high pressure, less hurry and worry, less draining of our physical energies.

We as a nation suffer from hyperactivity. Too many of our best minded men, men of affairs and leaders in their community, are lost to usefulness through sudden and premature death.

The newspapers are filled with reports of such misfortunes. Such tragedies usually befall men, not women. According to statistics eight men meet sudden and early death to one woman. This difference is due to the fact that women as a rule lead less tumultuous and strenuous lives and that they have learned the value of the recuperating power of relaxation. The large number of men who succumb to heart disease is proof of the fact that we must learn to let up. All work and strenuous play may make the heart a dull and unresponsive organ. It must be remembered that in an individual in complete rest the heart does fifty per cent less work than when the individual is at work. Treat your heart to a holiday and give it the benefit of at least twenty-five, if not the full fifty per cent.

From time to time in the history of mankind some one disease or another has been looked upon as the human scourge. Today it is heart disease.

Heart disease is one of the most vital medical, sociological and economic problems of civilized races.

Two per cent of all persons examined by insurance companies are rejected for heart disease. Two per cent of all industrial workers have heart disease. One and a half per cent of our children suffer from the same disease. In New York City alone children of school age with bad hearts number twenty thousand. In the last war, out of five million men of military age, two hundred thousand or four per cent, were disqualified for service because of heart defects.

In the United States over a million persons are afflicted with diseases of the heart. Ten per cent of the bed capacity of our hospitals are given over to heart cases. The death rate for heart disease is mounting higher with each passing year.

Heart disease causes more deaths than tuberculosis and more deaths than cancer. If we realize that one out of fifty employed in industry has a bad heart, we get a glimpse of the danger involved in the employment of such men in positions fraught with danger to our lives.

If there occurred in the midst of our community an epidemic of smallpox or a few cases of yellow fever an extraordinary panic would overtake us and the newspapers would carry large headlines on the front page. But the slow but sure sapping through heart disease of the vitality of our country is allowed to pass wholly unnoticed.

In the short space of two generations or more, an agricultural civilization has given way to an industrial civilization, and a village and town civilization with scattered populations has been replaced by a city civilization with populations concentrated at fewer points. Our new modes of living and our indifference or inability to adjust ourselves to them are no doubt great factors in the physical deterioration of the nation. Man's mental powers are conditioned by his physical vigor. With a loss of vigor he cannot enjoy the material, mental and spiritual advantages of the present age. Man is mentally at his best at seventy, if he can manage to keep his health up to that time.

Health, our greatest national resource, we squander recklessly. We are indifferent to personal and community health problems. We have not yet taken up the conversation of health and the prevention of disease with the same enthusiasm and wholeheartedness with which we carry on our industrial and commercial enterprises. We have conquered the forces of nature, but we still remain irrational primitives because we lack command over ourselves.

Among the factors figuring prominently in the wholesale loss of vitality among us we may mention a negative mental attitude—chronic fear, worry, anxiety, mental and emotional unrest. The responsibilities of modern life come to many of us as a very big burden to carry. Another factor for physical breakdown is strenuous living with its too many hours of fatiguing concentration and too few hours for relaxation. Far too many of us make of life one long fever and yearning for possession and conquest, for sensation and excitement. Far too many of us make of life a Niagara force without direction, a noise without significance, a speed without accomplishment. Far too many of us rush breathlessly through life and never once possess our soul before we die.

"Rushing to the office, rushing out to eat
Rushing back, and rushing home
Down the rushin' street.
Rushing up, and rushing down, rushing in an' out,
Say, what's all the rushing for? What's it all about?"

"Rushing after money, rushing after fame,
Climbin', pushin', shovin'
It's a dizzy game.
Steppin' on each other's heels, let me by—look out!
Say, what's all the rushing for? What's it all about?"

"What's the use of rushin', let us loaf awhile,
Watch 'em push, an' run an' grab
We'll just sit and smile.
As they scramble down th' road, gaily we will shout,
Say, what's all th' rushin' for? What's it all about?"

—Victor E. Levine, Omaha.

RABIES

The statement has been made that human rabies does not occur. Certain practitioners believe that because they have never personally come in contact with a patient suffering from rabies, that the disease does not affect man. They advance the opinion that the peculiar manifestations of rabies are caused by fright and explain the symptoms resulting as due to hysteria.

In Omaha there have been at least seven who have died of this terrible disease in the past three years.

Bites about the face or deep in the flesh are usually much more serious. The bite of a cat is considered more likely to develop hydrophobia than that of a dog. It is said that 15% of all those bitten by a dog or cat are liable to develop rabies. Commonly it is believed that rabies is a disease of the hot summer months. Probably bites by animals are more frequent during the summer months, but statistics are available to prove that rabies in animals is as common in winter as in summer.

One notable fact regarding the disease is the extreme variableness of the time elapsing between the receipt of the bite and the development of symptoms. The average limit of incubation is said to be from three to eight weeks. It may be shorter ,or longer. Three months is regarded as a fairly safe limit. Cases reported as occurring after one year have not absolutely reliable data.

In man the disease is always fatal. There is no known treatment which accomplishes anything toward the patient's recovery, after symptoms of rabies have developed in the human. Death occurs in about three days and is due to respiratory failure or cerebral hemorrhage. Two types of the disease occur in man, viz.—The excitable type and the paralytic or so-called dumb type. 95% of all human cases are of the excitable type.

Several extremely important things are worthy of note regarding treatment. With proper treatment of the wound and the use of serum the death rate is less than 1%. Without treatment the mortality rate is 100%. A delay of twenty-four hours without treatment is not regarded as serious unless the wound is deep, a cat bite, or about the face. The dog or cat should not be killed but should be confined and observed for symptoms of rabies. Proper treatment of the wound should be insisted upon. Sucking the wound with the mouth in an emergency is advisable. Complete excision of the wound as soon as possible after being bitten is, at times, the best treatment. Practically the simplest and probably also as useful as any of the above methods is the actual cauterization of the well opened wound with nitric acid. The use of mercurochrome, carbolic acid, or other popular antiseptic applications are not considered efficient. Possibly in certain instances cauterization in the manner outlined is all that is necessary. However, if the bite is deep, that of a cat, or about the face, injections of serum should be begun at once.

No doubt there is a certain hesitancy to subject a patient to injections of serum without more information as to whether or not the dog is rabid. Probably the only safe way is always to give the serum unless the individual circumstances would in our judgment seem to not require it. Where indicated the serum injection should be begun within twenty-four hours after the bite and continue daily for approximately ten days. If at the end of ten days the dog manifests no symptoms of rabies the injections are stopped. If symptoms are evident, the complete series of fourteen or more doses is given.

The older Pasteur treatment consisted of twenty-one doses. The newer Semple serum is an emulsion of the brain tissue of rabbits moribund from the injection of a virulent fixed strain of rabies. It is important that the serum be constantly refrigerated from the time of its manufacture to its infection into the human.

The Japanese, since the World War, have been carrying out on the dog almost universal prophylactic injections of anti-rabic serum. A few states and certain cities in the United States have adopted this method of preventing rabies. The results have been good.

Rabies in the human is a preventable disease. With proper treatment of the wound and the early injection of serum when indicated, or possibly by vaccinating every dog in a given community against rabies, the horrible deaths from this dread disease need not occur.

—Floyd Clarke, Omaha.

DR. OLGA STASTNY, PRESIDENT, NATIONAL ASSOCIATION OF MEDICAL WOMEN

When the National Association of Medical Women meets in Detroit this month, coincident with the meeting of the American Medical Association, it will be presided over by a native of Wilbur, Nebr., and a practitioner of Omaha—Dr. Olga Stastny.

DR. OLGA STASTNY

Dr. Stastny was born near Wilbur, graduated from the local high school, married a struggling dentist, bore two children, was widowed and with a little insurance money at 28, determined to study medicine, entered the State University for preparatory work and in 1913 was graduated from the Omaha Medical College before its incorporation with the University College of Medicine, served an internship in the New England Hospital for Women and located in Omaha to develop a practice. In 1917 she promoted a tag day after the evacuation of Belgrade by the Austrians and raised $10,000 for relief work, canvassed the Bohemian communities of Nebraska for the Red Cross and Liberty Loan drives, accepted work with the Red Cross and in 1918 went overseas with Unit No. 1 of the American Woman's hospital for post-war work at Luzancy, France, for which she was decorated by the French government. Called to service in Czechoslovakia she spent two and one-half years doing relief work and teaching social and medical hygiene in a Y. W. C. A. training school and visited the soldier's camps to talk social hygiene from the ethical, moral and idealistic standpoint.

Called to service in Greece she was made medical director of a quarantine station on the island of Macronissi with 12,000 sick, ragged, vermin and pestilence infested refugees, and in five months, with a scarcity of all kinds of supplies, cleaned up the camp and cleared the refugees for Macedonia. In recognition of this she was decorated by the Greek government.

At present she is National Patriotic Chairman of the Woman's Overseas League and also National Health Chairman of the National Federation of Business and Professional Women. As such chairman she is putting on a campaign to teach positive health, aiming principally to teach women the difference between regular medical advice and that of the cults.

Two years ago, at the national meeting of the National Federation of Business and Professional Women's clubs, Judge Florence Allen of the Ohio Supreme court was acclaimed the outstanding American woman in the professional world, her closest competitor being Dr. Olga Stastny of Omaha.

Dr. Stastny was elected President-elect of the National Association of Medical Women at the Portland meeting last year and will become president at the Detroit meeting.

So reads the record of the most dynamic American woman in Medicine today.

THE FORTHCOMING A. M. A. MEETING AT DETROIT

The annual meeting of the American Medical Association will be held at Detroit, June 23-27. A physician going to the meeting by train should buy a through ticket and at the same time ask for a *certificate* showing the amount paid, which on being validated at Detroit A. M. A. headquarters entitles the holder to buy a return ticket at half price.

Dear Reader:

The Journal and the Cooperative Medical Advertising Bureau of Chicago maintain a Service Department to answer inquiries from you about pharmaceuticals, surgical instruments and other manufactured products, such as soaps, clothing, automobiles, etc., which you may need in your home, office, sanitarium or hospital.

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We want The Journal to serve you.

EDITORIAL PARAGRAPHS

Levine stressed the fact that liver is diuretic.

The American Proctological Society will meet at Buffalo, June 22-24.

Urnes stated that 4,000 women die annually in the United States of eclampsia.

The same blood donor should not be used repeatedly for the same patient says Christopher.

It is stated on authority that 150 different articles produce the reaction known as "Ivy poisoning".

Paternity tests by blood grouping is not yet an accepted method of proving or disproving paternity.

The first portion of the new Veterans' hospital being erected on the outskirts of Lincoln was dedicated recently.

Why some essayists will spend one-half of the allotted 20 minutes for reading a paper, in reciting ancient history of the subject, is beyond one's ken.

It is reported that a cultist in this state undertook to do a gradual reduction of a dislocated hip of long standing with the result that he produced a broken thigh.

Fever can be produced in man by subjecting him to short radio waves. Temperatures as high as 104 have been produced in the research laboratory of the General Electric Company.

The U. S. Public Health Service has announced that canned salmon contains the pellagra preventing factor and suggests salmon as a fair substitute for meat in the areas of pellagra endemicity.

The Walgreen Prize of $500 for the winning essay in the Second Annual Gorgas Memorial Essay Contest was awarded to Pauline Lodge, of Lakewood, Ohio, a senior in the local high school. The second prize of $250 went to Canasia Duncan of Omaha.

One of the most disgusting things around a medical society meeting is the mumbling of essayists. In assembly rooms with notoriously poor acoustics, the essayist should make an effort to so modulate his voice that it will carry over the room. If he does not want to be heard he should remain at home.

How the supposedly authoritative pendulum does swing! Yesterday viosterol was superior to cod liver oil; today cod liver oil is much superior to viosterol as an anti-rachitic agent. De Sanctis and Craig, in *J. A. M. A.*, April 26, 1930, found cod liver oil prevented rickets in 97% of cases studied and viosterol prevented rickets in 77% of cases studied.

Congress has created a George Washington Bicentennial Commission to arrange to commemorate the life, character and achievements of the most illustrious citizen of the Republic and to give every man, woman and child living under the flag an opportunity to take part in the celebration which will be outstanding in the world's history.

The study of man after death is always an interesting subject. It is, therefore, of interest to learn that Dr. Arthur MacDonald, Washington, D. C., who has done much to popularize post mortem study, has dedicated his body to the Anatomical Laboratory of Western Reserve University Medical School for study of the entire body, not only the brain.

The Leonard Wood Memorial for the Eradication of Leprosy is authority for the statement that there are 3,000,000 lepers in the world; 12,000 in the Philippine Islands; that 2,013 have been cured in the Philippines since 1922. $1,600,000 of the proposed $2,000,000 fund has been raised. Contributions to the fund may be sent to Gen. Samuel McRoberts, Treas., Metropolitan Tower, New York City.

The annual meeting of the American Associafor the Study of Goiter will be held at Seattle, July 10 and 11, and at Tacoma and Mt. Ranier, July 12. The program shows thirty-four numbers on the program, among them a paper by Dr. Clyde Roeder, Omaha, on "The Third Type of Toxic Goiter". A cash prize of $300 for the best original thesis dealing with some phase of the goiter problem will be awarded.

The death of Dr. David S. Fairchild of Clinton, Iowa, March 22, at the age of eighty-two years, is announced. Dr. Fairchild was one of the foremost men of the Iowa profession for many years. He was repeatedly honored by his state society and by national associations. He was editor of the *Journal of the Iowa State Medical Society* for 17 years, resigning less than two years ago. He published a history of Iowa medicine within the last few years. He was one of Nature's noblemen.

It seems evident that our Dr. Claude P. Fordyce has been pretty well fitted into the routine at the A. M. A. headquarters for a schedule at hand lists him for radio talks over the Columbia Broadcasting System at 12 noon from April to August. The unused portion of the schedule is given below for the benefit of the reader:

June 3—Swatting the House Fly.
June 10—Rules of the Health Game.
June 17—A Vacation for Health.
June 24—Do You Know Your Drinking Water
July 1—A Safe and Sane Fourth.
July 8—Living Outdoors.
July 15—Safety First on Your Vacation.
July 22—Health Hints for Hot Days.
July 29—Summer Ills.

"Just Like Mother Used to Make", an article in the *Ladies' Home Journal* for May, 1930, by Dr. Logan Clendening of Kansas City, is the most sensible thing written on diet for a long time and should be read by every physician. His concluding remarks follow: "Thus, though every person has the same machinery for nutrition, everyone has not the same power of assimilation nor is the machinery keyed up to the same pitch. One person can get fat on a mouthful while another starves on twice the proper calculated amount. It would be a very dismal situation if it were not for the fact that nature has given each of us two highly scientific nutritional detectives in "Taste" and "Appetite". The interoperations of man and nature through the ages have arranged things so that in general under normal conditions what he likes, and wants—what tastes best to him—is what is good for him."

This writer is intimately related to a man who on a reducing diet dragged himself around for about five years; then, disgusted, treated himself to a more liberal diet, gained about a dozen pounds in weight and a tremendous amount in energy and general well-being.

THIS MONTH IN MEDICAL HISTORY

June, 1930

Dr. John D. Godman died in Annapolis, Maryland, June, 1930, at the age of 32. He had already taught anatomy as a private teacher in Philadelphia, had been made Professor of Anatomy at Rutgers, and had published several works in Natural History.

Edward Jenner published his paper on cowpox and the employment of vaccination for the control of small pox at Berkeley, Gloucestershire, June 21, 1798.

June 22, 1830, the pillory was used for the last time in London.

June 28, 1630, Dr. Samuel Fuller, the first physician mentioned among the American colonists, wrote to Governor Bradford: "I have been to Matapan (now Dorchester) and let some twenty of these people's blood."

1530. The first important systematic study of metals was made by Georg Agricola at Chemnitz. His most important medical work was De Peste. Basal 1554.

1530. Typhus fever was epidemic in Italy in this year, and was described by Fracastorius in 1533.

1880. Mosetig Moorhof introduced iodin into surgery.

1530. One of the earliest known forms of spectacles consisting of two circular lenses connected by a nose bridge, was the property of Pinkheimer (1470-1530). They are now in the Nuremberg Museum.

1880. June 1. On this date the American Surgical Association was founded with Dr. Samuel D. Gross as its first president.

1930. Baron Justus von Liebig's analysis of organic substances was published at Giessen.

1830. Alfred Armand Louis Marie Velpeau, son of a blacksmith, was appointed, at the age of 35, surgeon to La Pitie in Paris. He died in 1867 at the age of 73. Velpeau and Trousseau were pupils of Bretonneau.

1830. Raised printing for the blind was invented by Charles Barbier in France.

1887, June 9. The first successful spinal cord tumor removal operation was performed by Sir Victor Horsley in London. The tumor had been diagnosed and localized by Sir William Gower.

1530. Thomas Vicary was master of the Barber Surgeons Company of London. In 1548 he was one of the governors of St. Bartmolomew's hospital and published the first English work on Anatomy. This was reprinted in 1577 and held the field as a text-book for 150 years. This book was said by J. F. Payne to be a transcript of notes made in the fourteenth century upon the writings of Lanfranc, Guy, and Mondeville. There are said to be no copies of the 1548 edition in existence.

NECROLOGY

James L. Greene, Hot Springs, Ark., a former president of the Nebraska State Medical Association, was born at Shelbyville, Ind., November 1st, 1861, and died at Hot Springs, Ark., while in the midst of an address, April 21, 1930.

He was graduated at the University of Vermont Medical School in 1884 and practiced medicine at Morgantown, Indiana, until the spring of 1890 when he went to University Place, Nebraska. In 1893 he went to the hospital at Norfolk as assistant superintendent and remained two years, returning then to University Place. In 1900 he went to the hospital for insane at Lincoln as superintendent and remained until 1906; when he was made superintendent of the Hospital for Insane at Kankakee and stayed there until 1909 when a new board was created in Illinois to take over all of the charitable institutions and he was made State Alienist with offices at Springfield. In 1911 he was given the superintendency of the State Hospital for Nervous Diseases at Little Rock and stayed there until December 1st, 1914, when he moved to Hot Springs and went into private practice.

DR. J. L. GREENE
President, Nebraska State Medical Association, 1906

Within recent years Dr. Greene travelled a good deal, making one trip around the world, one circular trip around the Pacific and one to the Mediterranean. He spent two summers in the National Heart Hospital in London.

He was a member of the Arkansas Construction Commission which is to build an entirely new hospital for the insane as well as some additional work on the hospital for the tubercular. It was while addressing a meeting of the commission at Little Rock that he suddenly said, "I must quit"—and fell back dead.

While living in Nebraska, Dr. Greene was actively interested in the Nebraska State Medical Association, was treasurer for a number of years and in 1906 was elected president, a position which he resigned during the same summer on going to Kankakee, being succeeded in the presidency by Dr. F. A. Long, then vice president. Dr. Greene had a wonderfully pleasing personality and was a convincing speaker. He was buried at Morgantown, Indiana.

A widow, son and daughter survive.

George F. Bartholomew, Newport, Nebr.; Nebraska University College of Medicine, 1902; practitioner at Newport for twelve years, and endeared to the community by affability and zeal; died April 28, 1930, aged about fifty-nine years. He leaves a widow and son.

FIFTEENTH ANNUAL CLINICAL SESSION OF THE AMERICAN COLLEGE OF PHYSICIANS

The American College of Physicians will hold its Fifteenth Annual Clinical Session at Baltimore, Maryland, from March 23-27, inclusive, 1931. The Lord Baltimore Hotel will be headquarters.

Dr. Sydney R. Miller, Baltimore, as president, will have charge of the selection of the general scientific program. Dr. Maurice C. Pincoffs, of Baltimore, has been appointed by the board of regents as the general chairman of the session, and will make all local arrangements, including the making up of the program of clinics. Business details will be handled by the Executive Secretary, Mr. E. R. Loveland, from the College headquarters, 133-135 S. 36th Street, Philadelphia, Pa.

The attention of secretaries of various societies is called to the above dates, in the hope that their societies will select non-conflicting dates for their 1931 meetings.

AMERICAN CONGRESS OF PHYSICAL THERAPY

Announcement is made of "A Post Graduate Week of Physical Therapy" in conjunction with the ninth annual scientific session of the American Congress of Physical Therapy, to be conducted September 8th to 12th, inclusive, 1930, at the New Hotel Jefferson, St. Louis, Mo.

An intensive post graduate week of physical therapy is promised. Elaborate plans have been perfected for teaching, demonstrations and clinics. The physician who is interested in physical therapeutics and who has not had any instruction in the work will find the lectures on the fundamentals a sound basic means for further study. The more experienced, on the other hand, will gain considerably from the advanced expositions on light, heat, electricity, massage and all the other physical agents utilized in practice. Every phase of physical therapy will be covered. The subjects will be general and specific and so varied as to appeal to both the general practitioner and the specialist.

While it is appreciated that a week is a rather short period for post graduate teaching, the systematic arrangement of the program makes it possible for the physician to attend only those sessions in which he is vitally interested. As has been the practice in the past, sectional gatherings will prevail in Medicine, Surgery, and Eye, Ear, Nose and Throat. Several of the afternoons and evenings will be given over to addresses by prominent guests. There will be symposia on "Education and Teaching of Physical Therapeutics" and on "The Relation of the Physician and the Technician in Office and Hospital Practice".

New features in the conduct of clinics and demonstrations will be observed. In fact, so many new features have been arranged that they cannot be enumerated here. The preliminary program will be issued within a short time. Full information and details are contained in it. Send your name and address to Executive Secretary, American Congress of Physical Therapy, Suite 716, 30 N. Michigan Avenue, Chicago, Ill.

AUXILIARY NOTES

Lancaster County Auxiliary held a luncheon at the University Club in Lincoln on April 30th. Mrs. H. J. Lehnhoff presided and a novel feature of this meeting was that each member introduced the member seated at her right. Mrs. Overgaard of Omaha spoke on the "County Health Unit Plan". Mrs. G. W. Dishong of Omaha was a guest of the Auxiliary.

The annual business meeting was held with the following election of officers: President, Mrs. F. F. Teal; Treasurer, Mrs. W. W. Carveth; Secretary, Mrs. T. C. Moyer.

The annual meeting of the National Auxiliary of the American Medical Association will be held in Detroit from June 23-27th. The roof garden of the Hotel Tuller will be headquarters for all Auxiliary business.

—T. H. R.

SOCIETIES

Regular meeting of the **Omaha-Douglas County Medical Society,** Medical Arts Auditorium, April 8, 1930.

Dr. A. S. Pinto presided in the absence of President Pollard.

The following were elected to membership in the society:

Dr. Ralph Lovelady of Sidney, Iowa.

Drs. J. Marshall Neely, Louis E. Marx, Charles F. Gurney, Kenneth F. Gates and Linville F. Valentine, all internes at the University Hospital, Omaha.

A vote of appreciation and thanks was extended by the society to Dr. A. F. Tyler on the publication of his book, "The History of Medicine in Nebraska".

The first speaker on the scientific program was Dr. E. A. Connolly, who talked on "Skin Grafting by Implantation". Two patients were present, one who had a carbuncle and skin graft, the other a graft on the wrist.

Dr. F. W. Heagey reported a case of "Complete Colectomy for Stasis" and illustrated this with the x-ray films. Dr. Roeder discussed the surgical aspects.

"Unusual Features in a Diabetic" was discussed by Dr. A. S. Rubnitz.

Dr. E. E. Simons reported an "Unusual Case of Malignancy" in a girl of nineteen. The surgical interference was discussed by Dr. L. E. Hanisch and the pathology by Dr. A. S. Rubnitz. The doctors presented the x-ray films for study and also specimens of the tissues removed.

Dr. L. E. Hanisch then reported an "Unusual Fracture of the Cervical Spine" with dislocation and cord lesion or injury to the meninges. The neurological report on this case was made by Dr. A. E. Bennett and Dr. Carleton F. Peirce discussed the x-ray findings.

Dr. C. A. Roeder described a "Case of Actinomycosis".

"Clinical Notes on Work Done at the County Hospital" was the subject of Dr. J. E. Summers' remarks.

Dr. C. M. Swab described a case of "Rat Bite Fever".

A case of "Ruptured Uterus" was discussed by Dr. F. J. Murray; Dr. Eggers discussed the pathology and specimens were passed around for the inspection of the doctors.

Dr. F. L. Dunn talked on diabetes. His talk was illustrated with lantern slides showing the blood chemistry.

A film on "Rabies" completed the evening's program.

Omaha-Douglas County Medical Society meeting of April 22.

Secretary announced the meeting of the Council which had taken place Tuesday noon, April 22nd, at University Club. In this meeting the Council of the Parent Teachers Association was represented by two delegates to confer with the Council of the Omaha-Douglas County Medical Society on the problem of regular spring and summer round-up for the examination of pre-school children. It was decided for the present to appoint a committee of five to work out this problem.

The guest speaker, Dr. Alexis M. Forster of Gragmor Sanatorium, Colorado Springs, was introduced by Dr. Rodney W. Bliss. Dr. Forster presented a very interesting motion picture, illustrating the efficacy of sunlight in the treatment of various types of tuberculosis in adults and children. Cervical gland tuberculosis, tuberculosis of the bones and joints, cold absesses, and tuberculosis of the pulmonary type were well illustrated by cases shown on the screen. Good results with this type of treatment, accompanied by rest and systematic treatment were almost universally accompanied by good results.

The motion pictures were followed by lantern slide demonstrations of various cases in which heliotherapy has produced beneficial results. Lively discussion followed.

—Herman Jahr, Sec'y-Treas.

The regular meeting of the **Lancaster County Medical Society** was held in the Sharp Building on April 1, 1930, Dr. George H. Walker, the president, presiding.

The first paper of the evening was read by Dr. Wm. I. Rotton. This was a report of a case of extensive osteomyelitis of the mandible. The doctor showed lantern slides of x-rays of these cases which involved a large part of the mandible on one side apparently originating from periapecal infection and ended by discharging the large sequestrum after which healing took place.

The first formal paper of the evening was by Dr. Floyd L. Rogers on "Diabetes Mellitus". Using charts as guides, Dr. Rogers made a very interesting analysis of 100 cases of diabetes. He began by illustrating graphically the differences between true diabetes and other types of glycosuria. He then illustrated graphically the difference in blood sugar and threshold levels of the different grades of diabetes. The age curve of these patients coincided with the Joslyn curve, the greatest incidence in the fourth, fifth and sixth decades. He outlined the associated diseases in the group of which the greatest majority were infections. Complications were outlined and here arteriosclerosis, heart disease and gangrene were prominent. Very little was said about the details of medical treatment but he made a strong plea for better education for the diabetic patient, illustrating this by two deaths from coma which had occurred in patients who were not trained to cooperate well. The paper was discussed by Dr. Covey, Andrews, Becker and Thompson.

The second paper of the evening on "Colitis and Associated Conditions" was read by Dr. Harry E. Flansburg. In this paper the doctor called attention to the various non-specific affections of the colon. He outlined the history of a treatment of these types of colitis. The condition usually originates in people of decreased out-door activities, long and intense working hours, added responsibilities and improper diets. The intestinal tract reflects this nervous derangement by spasm and stasis, resulting in fermentation, putrifaction and toxemia. He stated that good authority estimated 30% of cases presenting gastric intestinal symptoms due to functional disturbances of the colon. He recommended careful history, thorough physical examination, instrumental exploration of the lower bowel, careful examination of stools and the administration of barium with x-ray. He stressed the relation of colitis to chronic diseases, such as, arthritis, asthma and cardiovascular disease, as well as infection to the urinary tract. No comments were made upon the treatment. The paper was discussed by Drs. A. D. Munger, Covey, Webb, Hancock, Mitchell, Becker, Waite, Hompes and Thompson.

Dr. Cook read the report of the committee on preparation of resolution suitable to the occasion of the death of Dr. Wm. L. Dayton. This report was accepted.

The possibility of getting Dr. Singer of Oxford here to address the society on some medical history subject was announced. This was discussed, and it was moved by Dr. Hohlen, seconded and carried that the society pay Dr. Singer $100.00 for an evening's lecture.

It was moved, seconded and carried that the president appoint a committee on funeral arrangements of deceased members.

The death of Dr. Rickard was announced.

The regular meeting of the **Lancaster County Medical Society** was held in the Sharp Building, April 15, the president, Dr. George H. Walker, presiding.

A short talk was made by Dr. F. W. Webster on Vincent's Gingivitis. Dr. Webster spoke on the variations in the spirillum and fusiform bacillus to be found in these cases. He discussed the nature of the lesion and the factors predisposing to infection. He discussed at some length the treatment which he believes should be local using oxidizing substances and chromic acid on the lesion directly. He objected to the use of neoarsphenamine, stating that he had seen Vincent's infection develop in patients receiving arsprenamine for syphilis. The paper was discussed by a number of members of the society. Dr. Hompes particularly took exception to the neoarsphenamine, stating that he had seen many brilliant cases of recovery under that treatment, although it was not invariably successful.

The first regular paper of the evening was read by Dr. L. C. Knight who very kindly advanced his place on the program to supply for Dr. Emerson who was not able to attend this meeting. His subject was "Hyperplastic Ethmoiditis". He discussed briefly the anatomy of the sinuses and stated that hyperplastic ethmoiditis is the most common of the chronic conditions found. This follows frequent attacks of coryza which leave changes in the mucosa, these chronic inflammatory changes causing the development of polypi. The symptoms are those of recurrent or persistent acute coryza, coughing from laryngeal irritation and even asthma. He discussed the advantages of conservative and radical measures in the treatment of the condition and stated that he advocated a simple operation consisting in the puncture of the bula ethmoidalis by means of a flat periosteal elevator which he then rotates between the fingers and withdraws wiping the puncture wound clean. The puncture is kept open for a week by local applications. He reported three cases on which this operation has been done with good results and states that it had been done 114 times with 84% success. The paper was discussed by Drs. Hompes, Black, Thomas, Elliott and Brooks.

The second paper of the evening was read by Dr. John C. Thompson on "Intestinal Dyspepsias". He introduced his paper by saying that in a series of 500 gastric intestinal cases Alvarez had found demonstrable organic pathology in 137 and the remalning 363 had no certain diagnosis. Such is the situation with every diagnostician and it was the purpose of his paper to deal with some of the methods of diagnosis which might be used in the cases presenting no obvious pathology. He gave the intestinal test diet as employed by Lauda and a description of the normal stools obtained from this diet. He defined intestinal dyspepsia as including the functional disorders in absorption, motility and secretion occurring without change in the structure of the gastrointestinal tract. One type of dyspepsia has been described as intestinal fermentative dyspepsia arising from a difficulty in the digestion of cellulose and starch. He mentioned a lack of diastase, the presence of fermenting bacteria and abnormal sensitiveness of the mucous membranes as factors in the production of this condition. The process occurs in acute and chronic forms. He outlined the general symptomotology and findings on stool examinations, the stools show presence of cellulose and starch, are strongly acid and form large quantities of gas. The second form of dyspepsia is the putrefactive type arising from the presence and bacterial digestion of albuminal substances in the bowel. The albumin may be ingested or the result of pathological processes. He outlined the general symptoms and described the stool which is foul, may contain mucous, contains meat fibers and connective tissues may be strongly alkaline and shows only a moderate amount of gas formation. He outlined in detail the dietary treatment of these conditions and considered some of the disorders of fat digestion, which can be demonstrated by the presence in the stool of neutral fats, fatty acids or soaps. He stated that other dyspepsias occurred than those due to disturbances of digestion and mentioned particularly uraemic dyspepsia and allergic dyspepsia. In conclusion he stated that nervous dyspepsia should only be considered after careful examination has ruled out the functional dyspepsia or organic lesions. The discussion was opened by Dr. Flansburg and continued by other members of the society.

—Roy H. Whitham, Sec'y.

The meeting of the **Madison Five Counties Medical Society** at Norfolk, April 29, was, owing to almost impassable roads, rather poorly attended. Dr. C. W. M. Poynter, dean of the University of Nebraska College of Medicine, spoke on "The Trend of Opinion on Peritonitis". Dr. Poynter has conducted some intensive research work on the circulation of the peritoneum and on the direction of the lymphatics of the peritoneum, which has resulted in a revision of thought on the subject. The article by Dr. R. Russel Best in this issue brings out present views on this subject.

The **Cedar-Dixon-Dakota-Thurston-Wayne County Medical Society** met at Hartington, April 24. The following program was carried out: "Optochin Base in the Treatment of Pneumonia", Dr. Stuart Cook, Randolph; "An Obscure Case of Nephritis", Dr. R. C. Gramlich, Walthill; "Pyelitis in Infants and Children", Dr. R. P. Carroll, Laurel; "Diagnosis of Hyperthyroidism", Dr. R. N. Larimer, Sioux City.

—C. L. Phillips, Sec'y.

The **Lincoln County Medical Society** held a dinner and meeting, Thursday at noon, in the Yancey hotel, North Platte, when covers were laid for twenty guests. At the business session Dr. J. B. Redfield presented a case of sarcoma of the bone and read a paper on that subject.

The **Buffalo County Medical Society** met at the Hospital for Tuberculosis, Kearney, April 8. The following program was carried out: "Complication and Dangers Following Tonsillectomies", Dr. J. B. McPherson, Hastings, discussion opened by Dr. C. H. Fox, Kearney; "Surgery of the Prostate With Case Reports", Dr. E. Arthur Watson, Grand Island, discussion opened by Dr. O. D. Johnson, Kearney; "Differential Pathology of the Right Abdomen from X-ray Standpoint", Dr. Lee W. Rork, Hastings, discussion opened by Dr. C. K. Gibbons, Kearney.

The **Eighth Councilor District Medical Society,** which comprises almost the entire western half of the state, met in Odd Fellows Hall, O'Neill, May 1, with about twenty-five active practitioners present.

The following program was carried out:

"Allergy"—Dr. E. L. MacQuiddy, Omaha.

"Pyscho-neurosis"—Dr. G. A. Young, of Omaha.

"Early Diagnosis of the Acute Abdomen"—H. L Blosser, Norfolk.

"Acute Appendicitis in Children"—J. P. Gilligan, Jr., Nebraska City.

"Cooperation Between the M. D. and Dentist"—D. W. Summers, Valentine.

Motion Pictures—Hand Infections.

The Woman's Auxiliary met at the O'Neill Country Club, and passed a very pleasant afternoon.

A banquet was tendered the visiting Doctors and their ladies at the Golden Hotel at 7:30, by the O'Neill Commercial Club.

The **Harlan County Medical Society** met at Alma over a dinner May 1.

The following scientific program was carried out:

"Control of Contagious Diseases," Dr. P. H. Bartholomew, Lincoln.

"Certain Minor Surgical Problems," Dr. J. E. M. Thompson, Lincoln.

"Sinusitis, Some Remarks on Diagnosis and Treatment," Dr. A. D. Dunn, Omaha.

"Some Surgical Notes," Dr. John E. Summers, Omaha.

Following the scientific program the meeting resolved itself into a love-fest in honor of Dr. D. R. Rogers of Ragan who has been in the practice fifty years, forty-six years in Harlan county, and who has faithfully served the community in sunshine and in storm, regardless of the distance or the patient's ability to pay. His case records for all the years are said to be a revelation in business system. The following program in honor of Doctor Rogers was given:

"Reflections," Dr. K. S. J. Hohlen, Lincoln, President State Medical Association.

"On Far Into the Night," Dr. A. L. Marsteller, Wilcox.

"General Practitioners," Dr. C. S. Kennedy, Omaha.

"Summing," Dr. Dan R. Rogers, Ragan.

Drs. J. E. Summers and J. M. Patton, Omaha, sent messages of congratulation and regret, being unable to attend.

HUMAN INTEREST TALES

Dr. Jennie Callfas, Omaha, has filed for U. S. Senator.

Dr. William Robertson has moved from Holdrege to Kearney.

Dr. H. H. Humphrey, Tobias, was reported seriously ill last month.

Dr. D. F. Wilmeth, formerly of Omaha, has located at Hershey.

Dr. C. W. Weeks, Ord, spent several weeks in Chicago clinics in May.

Dr. Rudolph Rix, Omaha, suffered serious injuries in an auto collision recently.

Burchard is calling for a physician and the location is said to be a good one.

Dr. R. B. Armstrong has been reelected mayor of Papillion for the fourth time.

"Warren Memorial" hospital is to be built at Friend at an estimated cost of $25,000.

Dr. A. C. Stokes, Omaha, has filed for the office of regent of the state university.

Dr. R. L. Hart, Kearney, has been named physician to the State Industrial school.

Dr. John H. Calvert has located at Pierce in association with Dr. Walter Benthack.

Dr. T. F. McCarthy, Lincoln, suffered serious fire losses in his office a short time ago.

Dr. H. S. Tennant, Stanton, was recently elected president of the Business Men's club.

Dr. H. H. Stretton, Hastings, suffered a severe septicemia from a scratch of his hand.

Dr. C. D. Evans, Sr., has returned to his office after a forced vacation of about six months.

Dr. J. L. Paine, formerly in practice in this state has moved from Elma, Washington, to Olympia.

Dr. Harry E. Dorwart has become associated with his brother, Dr. Thomas Y. Dorwart, Lexington.

Dr. H. S. Andrews, Minden, underwent an operation for goiter in an Omaha hospital a month ago.

Dr. and Mr. Irving C. Wood, Omaha, have returned from a winter sojourn on the Pacific coast.

Dr. F. C. Wiser, Los Angeles, recently visited at Falls City where he was in practice twenty-one years ago .

Dr. A. J. Brown, Omaha surgeon, gave an address before the Illinois Medical Society at Joliet, May 21st.

McCook has created a health commission which shall have supervision of health and pure food matters.

Dr. M. U. Thomas, Weeping Water, is reported ill in a Lincoln hospital where he underwent an operation.

Dr. E. J. Clarke has located at Greeley. He is native of Broken Bow, but came to Greeley from Trenton, Ohio.

Dr. B. M. Deardorf, Clatonia, has had a serious time with a septicemia originating from a small infection on his face.

Dr. C. T. Ingham, Wayne, suffered severe electrical burns from a short circuit of his x-ray apparatus the last of April.

Dr. J. A. Borghoff and family have gone to Europe where the doctor will attend dermatological clinics in Vienna, Zurich and Paris.

Dr. A. J. Johnson, formerly of Stromsburg, has located at Glenvil in succession to Dr. L. D. Rider who went into veteran's bureau work.

Dr. G. F. Zarbaugh, formerly of Dalton, recently returned from special work in eye, ear, nose and throat in Europe, has located in Omaha.

Three hundred fifty premedical students from the State University were the guests of the University College of Medicine at Omaha last month.

A complimentary dinner was tendered Dr. D. R. Rogers, Ragan, recently celebrating the completion of forty-six years of practice in Harlan county.

Dr. J. E. Waller, for more than a dozen years a physician and public spirited citizen of Arapahoe, has gone to Twin Falls, Idaho, to live in retirement with his daughter.

ROSTER OF OFFICERS—1930

K. S. J. Hohlen, Lincoln, President-elect	1931
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J. M. Willis, McCook, Vice President	1932
F. B. Young, Gering, Vice President	1932
R. B. Adams, Lincoln, Secretary-Treasurer	1931

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W. R. Boyer, Pawnee City	1933
A. E. Cook, Randolph	1933
Morris Nielsen, Blair	1931
Frank Tornholm, Wahoo	1931
H. E. Potter, Fairbury	1931
W. J. Douglas, Atkinson	1931
R. D. Bryson, Callaway	1932
L. W. Rork, Hastings	1932
C. A. Selby, North Platte, Chairman	1932
A. L. Cooper, Scottsbluff	1932

DELEGATES TO THE A. M. A.

B. F. Bailey, Lincoln	1931
R. W. Fouts, Omaha	1932

DELEGATE TO COUNCIL ON MEDICAL EDUCATION OF THE A. M. A.

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MINOR SURGERY*

FREDERICK CHRISTOPHER, M. D., F. A. C. S.,
Associate in Surgery, Northwestern University Medical School, Attending Surgeon at Evanston Hospital, Evanston, Illinois.

Minor surgery is the surgery of low mortality; it is the surgery which requires but few assistants and which generally is done in the Out Patient Department, or in the office, or in the home. It is an ever-present and integral part of general practice, and in fact, of general surgery. It is probably no exaggeration to say that the group of minor surgical conditions is as numerous as any other group which the physician has to treat. Because of the fortunate propensity of the body to cure most ailments spontaneously, much inefficient work is condoned in minor surgery. There is often wider diversity of opinion as to what constitutes good minor surgery than there is in the treatment of cholecystitis or pneumonia.

The low mortality in minor surgical conditions is no reason why these conditions should not deserve the same careful thought and standardization of treatment which is present in the graver ailments. Skillful minor surgery greatly enhances the patient's comfort and reduces his morbidity. As Kanaval says, "there is no greater field for good surgery than is presented by minor surgery".

In engineering, architecture and other professions, the elementary courses are given before, and not simultaneously with, the major courses. It is quite possible that the medical schools of the future will give compulsory courses in minor surgery and that some, at least, of the major surgery will be taught in elective courses.

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*Address given before the invited guests at the Bryan Memorial hospital, Lincoln, Nebr., May 12, 1930, on the occasion of the opening of a new wing to the hospital.

The strongest plea for the teaching and practice of good minor surgery is the fact that poor minor surgery not infrequently causes the development of grave surgical conditions which could have been avoided. "Too often", says Kanavel, "minor surgery becomes major surgery through carelessness or incompetence."

We are all familiar with the occurrence of grave generalized infections from trivial breaks in the skin. The writer has seen a staphlococcus septicemia with multiple bone metastases originating from a neglected blister of the heel. The presence of a slightly infected cutaneous wound becomes important when a trauma, as a strained muscle, occurs elsewhere in the body. The bacteria will often center and propagate in the locus resistentiae minoris. Blisters should be prevented if possible. If they occur they should be protected. If they seem likely to rupture they may be opened under aseptic precautions through the intact adjacent skin. Once the blister be infected, the roof should be removed and the subjacent epithelium should be treated with a mild antiseptic as mercurochrome ointment. Children are prone to acquire abrasions over the elbows or knees. These abrasions soon become infected and healing is delayed by the constant motion of the part. Rest, and wet boric dressings are indicated and where there is a tendency to crust formation with pus beneath the crust, the latter should be removed and an antiseptic ointment or wet dressing applied.

Meticulous early care of trivial lacerations will pay big dividends in the reduction of morbidity. The first concern in the treatment of a small wound is the control of hemorrhage. Frequently a tourniquet has been applied with such tension as to occlude the veins and not the arteries. It is a common experience to see bleeding cease on the removal of such a tourniquet. Pressure and elevation of the part, will stop practically any venous bleeding and most bleeding from small arteries. The vascularity of the scalp lends itself particularly to bleeding. It is practically always futile to attempt the ligation of bleeding points in the scalp. The introduction of a few sutures will control such bleeding. Spurting arteries in muscle should be ligated. To attempt to control muscle bleeding by suturing the skin tightly over it is poor surgical technique; a haemotoma and continued bleeding will practically always result.

The hair about the wound should be shaved and the skin cleansed and treated with an antiseptic before the introduction of an antiseptic into the wound.

Recent studies of skin antiseptics have brought forward interesting results. Simmons (Simmons, J. S., *J. A. M. A.*, 91:704, Sept. 8, 1928) concluded that tincture of iodine was much more effective than any solution of mercurochrome for use on an unbroken skin. German (German, W. J., *Arch. of Surg.*, 18:1920, April, 1929) found acriflavine (1:800 to 1:2600) to be more efficient than gentian violet, mercurochrome and picric acid. Allen (Allen, A. W., *Arc. of Surg.* 19: 512, Sept., 1929) while admitting that present methods of judging antiseptics do not constitute an accurate index of their practical worth, found the halogens to be much superior to the dyes (mercurochrome and acriflavine). The most recent and most interesting study is that of Raiziss, Severac, and Moetsch, (Raiziss, G. W., Severac, M., and Moetsch, J. C., *J. A. M. A.*, 94:1199, April 19, 1930), who studied the sterilizing properties of various antiseptics on the infected skin. Ethyl alcohol and hexylresorcinol (S. T. 37) were found to be extremely inefficient. Two per cent acriflavine gave sterilization in 80 per cent of the cases and seven per cent iodine in 88 per cent. Five per cent iodine was ineffective. Two per cent mercurochrome-alcohol-acetone-water solution showed only seventy-nine per cent efficiency. On the other hand 1:2,500 dilution of metaphen produced one hundred per cent sterilization. Their studies indicated that better results were obtained with metaphen in dilutions 175 and 50 times greater than those employed for iodine and mercurochrome respectively.

It is not improbable that metaphen which is chemically mecuri—4, nitro—2 cresol, will become the antiseptic of choice for minor surgical wounds. It may be used in a dilution of 1:2,00 to 1:2,500. The writer also uses two per cent aqueous solution of mercurochrome and 1:1,000 acriflavine solution. Tincture of iodine is rarely used. A two per cent mercurochrome ointment in a base of 10% lanolin and 90% vaseline is useful for some wounds.

A wound should never be sealed with collodion; tetanus has developed following the application of collodion to a "brush burn". Punctured wounds should always be given most careful attention. They are best carbolized and where doubt as to the source of the wound exists, tetanus antitoxin is given after first ascertaining the patient's nonsusceptibility to horse serum.

Approximation of wound edges usually greatly diminishes the time required for recovery. Unquestionably, however, too many sutures are introduced in most wounds, particularly in scalp wounds. Gaping scalp wounds 1 inch to 1½ inches in length will heal very quickly without any sutures whatsoever. In small wounds where the skin is not in motion or subject to stress, an adhesive plaster dumbbell, the narrow portion of which does not exceed 1/16 to 1/8 of an inch, is probably superior to a suture. Michel clips are also useful but difficult to put in. Where sutures are to be placed, the anesthetizing of the skin borders with local anesthesia is greatly appreciated by the patient. For this purpose 2% novocain is injected by means of a short beveled 27 gauge needle into the intact skin border. Ragged wound edges should be trimmed off and deep wounds should be drained with a small piece of rubber or a very narrow strip of selvedged gauze packing. Where the skin flap is large, counter drainage openings should be made.

Furuncles and carbuncles should not be traumatized by squeezing or a dull knife. Of late poulticing softeners and ungents have assumed a larger role in the treatment of furuncles than previously. In progressive carbuncles, Carp (Carp, L., *Arch. Surg.*, 1927, 14:868) has had some success in the injection of autogenous blood at the borders of the carbuncle. 3-6 intracutaneous and subcutaneous circum-injections were made under general anesthesia. Carp believes the pain is less, the time of cure less and that the scar is minimized by this method. The administration of 3 grain capsules of bisulphate of quinine seems to have a distinctly advantageous effect in these cases. The value of tin and manganese is still in question. The studies of Besredka (Besredka, A., *Local Immunization*, Williams and Wilkins Co., Baltimore, 1927) are very hopeful in this connection. He has found that the application of dressings wet with culture filtrates has a beneficial effect on furuncles. When fluctuation is present incision must be generous and must be made by a sharp knife. The tiny "medical" incisions are painful and generally ineffectual. Carbuncles which do not respond to 24 hours of boric fomentations should be treated by radical surgical incision with under cutting of the flaps. Furuncles are best incised under nitrous oxide or cautious freezing with ethyl chloride. Local anesthesia solution should not be injected into an infected area.

Minor fractures are often overlooked. Lipping fractures of the phalanges may be missed because of the swelling if an x-ray is not taken and the true lesion undiscovered until the finger heals with a bony deformity. Magnuson (Magnuson, P. F., *J. A. M. A.*, Nov. 3, 1928) has clearly shown in fractures of the base finger phalanx how the lumbricalis muscle exercises an extension effect on the distal fragment with the result that, unless prevented, a flexion deformity will occur at the site of the fracture. Much skill and ingenuity must be exercised in the treatment of finger fractures. One of your own surgeons, Dr. Thomson (Thomson, J. E. M., *Surg. Gyn. and Obstet.*, Dec., 1920, p. 629) first described the valuable method of applying traction in finger fractures by thread passed through a hole in the nail. Numerous other methods of applying traction in finger fractures have been devised. In some cases, bandaging over a roller bandage will suffice but x-ray should not be omitted after the dressing has been applied.

Fractures of the metacarpals are particularly prone to dorsal deformity because of the pull of the interosseous muscle upon the fragments. (Magnuson, P. F., *J. A. M. A.*, Nov. 3, 1928). This throws the distal head of the bone into the palm of the hand making a painful prominence. Magnuson advises treating these fractures by posterior splinting with a dorsal pad over the point of the fracture and a palmar pad over the distal head.

Fractures of the base of the fifth metatarsal are commonly mistaken for sprains. Tenderness at the point of injury and x-ray will make the diagnosis: Immobilization in plaster of Paris will effect the quickest cure. Similarly small linear fractures of the scaphoid of the wrist will go without proper immobilization if accurate x-ray be omitted. Fractures of the epicondyles of the humerus may be mistaken for a sprain of the elbow.

Falls upon the head or upon the buttocks are often the cause of painful backs which are sometimes thought to be sprains. After a few days rest most of the symptoms disappear only to return upon resumption of activity. In these cases there may be compression fracture of the vertebra which is only discernible in well made lateral x-rays. The treatment is rest in lordosis on a Bradford frame or in a cast for 6-8 weeks and the wearing of a Taylor spine brace for 4-6 months. Dunlop and Parker (Dunlop, J., and

Parker, C. H., *J. A. M. A.*, 94:89, Jan. 11, 1930) have devised a useful method of decompression of compressed vertebral fractures. The reduction is effected under anesthesia by tossing the patient and, with the back in hyperextension, catching his weight at the injured area across a taught sheet folded six inches wide while strong traction is made on the body.

Small deep incised wounds of the fingers may be accompanied by section of the flexor digitorum profundus tendon which may be overlooked unless the absence of flexion of the distal phalanx is noticed. The repair of these severed tendons is made through an incision on the side of the finger avoiding as much as possible the flexion creases. For approximation of the cut tendon ends, the reinforced stitch of Bunnell is useful.

The search for needles and other foreign bodies presents a dismal chapter. Unless these objects are palpable, the operation for their removal should never be undertaken without fluroscopic control and good assistance. Prolonged dissection under direct vision is not only often futile but actually injurious to the extremity.

Failure to recognize some of the more uncommon skin infections may be disastrous. In anthrax the induration surrounding the lesion and the constitutional symptoms are more severe than in ordinary pyogenic infections. The diagnosis may be confirmed by examination of the pus in cultures and smears. The treatment is not local but the administration of anti-anthrax serum. The diagnosis of actinomycosis is made by finding the pin-head sized, sulphur yellow granules in the pus and the discovery of the organism (the ray-fungus). Complete excision is of great value in the early stages: In the latter stages, the fistulous tracts should be freely opened and curetted. The iodides are administered. Blastomycosis is a chronic infectious disease caused by the yeast fungus. The organism is readily found in the pus which has first been moistened with a 15 per cent potassium hydroxide solution. Potassium iodid and neo-arsphenamine are of value in the treatment. Surgery is employed only occasionally.

Even a circumcision may be poorly done. Too much or too little of the foreskin may be removed or bleeding points may not be properly controlled. Moreover, circumcision is doubtless performed more frequently than need be. The principal indications are marked phimosis and balanitis.

The failure to observe the proper technique of catheterization has led to many cases of stubborn cystitis. Cauterization of the primary lesion of syphilis prevents the early treatment which a dark field examination would indicate.

A frequent cause of failure in the treatment of paranychial infections is the incomplete removal of the finger nail. The nail base may be torn off and left behind where it acts like a foreign body and prolongs suppuration. The dangers of inadequate treatment of felons and tendon sheath infections are well known to all of us.

Additions to our knowledge of minor surgery are being made each year. Clinical research is clearing up disputed points. A few of the newer contributions may be mentioned.

The Winograd (Winograd, A. M., *J. A. M. A.*, 92:229) operation for ingrown toe nails is a distinct advance over the older operations. The nail and nail bed are removed but the skin edge at the lateral border of the nail is left intact.

Since Davidson (Davidson, E. C., *Surg. Gyn. and Obstet.*, 41, 202, 1925) in 1925 announced the tannic acid treatment of burns this method of treatment has come to be recognized as one of the outstanding therapeutic contributions of the generation. The patient is placed in a heated tent and his naked skin, from which any grease has been removed, is sprayed every 15 minutes with a 5 to 10 per cent freshly prepared aqueous solution of tannic acid until the burned areas are dark brown or black and are thoroughly tanned. In extensive superficial burns the blood becomes highly concentrated. This concentration of the blood is readily demonstrated by haemoglobin estimations. 125% haemoglobin is the danger level according to Underhill (Underhill, F. P., *Clinical Surgery*, 86:840, Dec. 1927); as high as 163% has been reported. The active administration of fluils is energetically indicated to combat this blood concentration. At least 1 quart of fluid for every 25 pounds of body weight should be given in 24 hours (Beekman, F. , *Arch. Surg.*, 18:803, Mar., 1929). Normal saline or dextrose Ringer's solution is given by infusion and hypodermoclysis and saline or tap water is given by proctoclysis.

After the tanned areas are hard and dry the patient is simply left without covering in the heated tent. Should suppuration develop beneath the crusts they should be opened or partially removed and the underlying area irrigated with saline—not boric solution. Wide areas denuded of skin will require grafting. For this purpose Thiersch or Reverdin grafts are most suitable.

In cases of severe electric shock lumbar puncture has been found to be a valuable adjunct to artificial respiration. It should be done as early as possible.

The work of de Takats, Sicard, McPheeters and others have placed on a firm basis the obliteration of varicose veins by injection of segments with a sclerosing solution. de Takats (de Takats, G., *J. A. M. A.*, 92:775, Mar. 9, 1929) employs 5 to 10 cc. of a solution of equal parts of 50 per cent dextrose solution and 30 per cent sodium chloride solution. This solution has been strongly recommended by Kern and Augle (Kern, H. M., and Augle, L. W., *J. A. M. A.*, 93:595). A segment of the vein is blocked off with the fingers while the solution is injected and for two minutes afterwards. A cotton plug is then pressed against the injected area and held firmly in place for two days. Two injections may be given at once and the treatments twice a week. An elastic bandage is worn during the time. This treatment is often combined with ambulatory ligation of the saphenous vein. de Takats (de Takats, G., *J. A. M. A.*. 94:1194, April 19, 1930), says that ambulatory ligation of the saphenous vein is indicated in cases where the saphenous trunk above the knee is dilated and shows marked reflux from above. If the main reflux is from the deep communicating veins, the operation is obviously useless (de Takats). It reduces the number of injections below the ligation.

In perfringens antitoxin we now have a weapon against gas gangrene in cases where the development of this condition is suspected. Since the publication of Caylor's work (Caylor, H. D., *Am. Surg.*, 82, 164, July, 1925) we can no longer regard the sebaceous cyst as innocuous. In Caylor's series of 236 cases, 3.4% became malignant. A percentage this high should cause us to advise the excision of all sebaceous cysts. Fractures of the clavicle are to be treated by clavicular cross splints or figure of eight braces are on the market. While these braces and splints are being worn, care should be taken that circulation is not impaired and that the patient give adequate exercise to his arms. The Lahey operation (Lahey, F. H., *Surg. Gyn. and Obstet.*, Jan., 1929) is a distinct advance in the treatment of pilonidal sinus.

The closed treatment of empyema cavities involves minor surgical procedures of careful exactitude. Local anesthesia has had an increasing field of usefulness in minor surgery. It can be used profitably in the revision of finger injuries where a nerve block of 2% novocain is injected on each side of the base of the finger. It is also used in the removal of haemorrhoids and the excision of fissures-in-ano, and in the reduction of certain fractures. For this latter purpose the nerve block method is probably superior to infiltration.

In the treatment of many fractures the molded plaster of Paris splint has superceded circular plaster casts. These splints accurately fit any shape of the extremity and are far superior to the commercial metal splints. They are made by spreading the wet plaster bandages on a flat surface to the desired length and thickness, taking care to rub the wet bandage as it is folded over on itself. This wet splint is then carefully applied to the extremity and allowed to harden in the exact shape desired.

The writer feels that the treatment of ganglions by dispersion, that is striking with a hard object, is superior to excision and has employed it frequently. Carp and Stout (Carp, Louis, and Stout, A. P., *Surg.. Gyn. and Obstet.*, 47,460, Oct., 1928) found fewer recourrences after dispersion than after excision. The removal of tattoo marks can be successfully accomplished by the tannic acid and silver nitrate method described by Shie (Shie, M. D., *J. A. M. A.*, 90, 94, Jan. 14, 1928). In sprained knees, painfully distended with fluid repeated aspirations will give great relief and will facilitate recovery. The aspiration is made one inch to the outer side of the patella. The valgus felt pad in sprains of the external lateral ligament of the ankle constitutes a very valuable addition to the treatment of that condition. These tapering pads are glued inside the shoe on the same side as the injury and take off the strain from the wrenched ligament. The splendid results in the treatment of plantar warts by radium will highly recommend that method of treatment. In whole blood transfusions the writer has found the Scannell three-way valve apparatus to be the most generally useful. By means of this apparatus the blood of the donor is pumped directly to the vein of the recipient. A word of warning must be said against using the same donor more than once for the same recipient. The writer has seen a serious anaphylactic reaction follow such a procedure.

The writer, in closing, wishes to urge all physicians to report in the literature all original minor surgical procedures which they have found to be of use. No matter how trivial the conditions are for which the method is recommended, all patients and doctors will welcome any additions and refinements of technique.

THE DISEASED GALLBLADDER—(Concluded)*

B. B. DAVIS, M. D., F. A. C. S.,
Omaha, Nebr.

The diagnosis having been made, what cases of gallbladder disease should be operated? The sooner the medical profession assimilates the idea that chronic gallbladder disease does not get well the better it will be for both patient and doctor. The decision of what is best to do should be based on broader grounds than the pathological condition of the gallbladder alone. The symptoms in a certain case may not be unbearable, but in a confirmed chronic cholecystitis the effect the pathological gallbladder may have on neighborhood organs and the role it plays as a focus of infection ought to receive careful consideration. In my own limited experience I have seen a number of patients who had been tonsillectomized and alveolectomized for rheumatism without relief whose rheumatism immediately disappeared after the removal of an inflamed gallbladder.

The vicious circle produced by the inflamed gallbladder causing hepatitis and being reinfected from the hepatitis has been so clearly depicted by Evarts Graham that it is only necessary to mention the fact here. There are numerous cases on record, and I believe it is much more common than generally supposed, where incurable liver cirrhosis has resulted from infections and constant reinfections from a chronic cholecystitis. I have seen and every surgeon who frequently operates for cholecystitis has seen livers so fibrosed that complete restoration to its normal function is impossible. This fact, I am satisfied, is one of the frequent reasons for incomplete relief after cholecystectomies.

The very frequent occurrence of pancreatitis due to infection of the lymphatic gland contiguous to the head of the pancreas, this gland being one of the catch basins of the gallbladder lymphatics, should not be looked upon lightly.

The coexistence of cholecystitis and gastric and duodenal ulcers is too frequent to be ascribed to coincidence or to be ignored. Whether the ulcer arises from the infection being carried from the gallbladder through the blood, or gets there by way of the lymphatics there is certainly a relation of cause and effect between the infection of the gallbladder and these ulcers.

For the reasons given and implied only one conclusion can be drawn, that every chronically inflamed gallbladder should be dealt with surgically.

Should cholecystectomy be the operation of choice in every case? This question has been discussed pro and con for many years. The answer seemed to be in the affirmative until recently several dissenters have been heard. In the pioneer days the infection was thought to be largely confined to the mucous membrane and it was logical to infer that such a superficial infection would be cured by drainage alone. This pathological misconception explains why cholecystostomy satisfied surgeons in the beginning.

Judd and others recently tested out 193 gallbladders that had been removed for cholecystitis. Positive cultures from the mucous membrane were found in only 14.5 per cent, while positive cultures from the deeper layers of the wall were found in 98 per cent. This shows how illogical simple surgical drainage is, for in 98 per cent of the cases the infection is too deep to be relieved by this procedure. As a further argument against cholecystostomy Boyden has shown by the Graham-Cole test that in cases subjected to drainage the ability of the gallbladder to empty itself is permanently destroyed. This bears out my own experience, for I have done cholecystectomy on more than 200 patients who had previously been subjected to drainage without relief, and most of them were symptomatically well after removal.

The gallbladder is not a functionless organ and this has been used as an argument against cholecystectomy. I am willing to concede the force of this argument. It is a serious matter to remove an organ which has a definite and valuable function, but we must remember that the pathological gallbladder has ceased to function normally and its presence is a detriment and a danger and no longer a help. It is a well known fact that after the gallbladder has been removed the extra-hepatic ducts dilate to 2 to 3 times their former size but it is doubtful if the ducts are able to take on the aberrant role of concentrating bile. I think it can now be given as a final word that one is better off with no gallbladder than a diseased one. The fact that the incidence of 4 per cent of cancers resulting from the continuous irritation of cholecystitis adds weight to this statement.

From what has been said you may infer that I remove every gallbladder found diseased. If this impression has been given I hasten to correct it for there is a definite place for cholecystostomy. In severe cases of acute empyema and gangrene cholecystectomy has too high a mortality and drainage quickly carried out will save many lives. Ectomy can be carried out later with much less risk. There is another type of case in which the gallbladder is buried in dense adhesions. To tear these adhesions and remove the gallbladder at all costs is bad surgery. The mortality will be found too high to justify such a radical procedure. These cases are much better dealt with by leaving the adhesions as they are, opening the gallbladder, ladling out the stones and draining, and it is fair to say that many of these cases are greatly benefited by this treatment. These gallbladders have lost their function; but after freeing them from the chief sources of irritation the patients often get along very comfortably.

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*Read before the Omaha-Douglas County Medical Meeting, Sept. 24, 1929.

When we meet a case that has been jaundiced for a long time from stones in the common duct, the patient very anemic, having extreme physical and mental depression, the liver having lost much of its power to functionate, the kidney function low, the heart weak, a very low blood pressure, it is sometimes impossible to get that patient into a condition which can stand the needful operation. All the ordinary methods of preparing them for the ordeal fail. I have had a number of cases of this type in which death would have followed an operation of the magnitude necessary to free them of the existing pathology. The following procedure was resorted to. Novocaine anaesthesia was used. After opening the abdomen and exposing the gallbladder a trocar and cannula was plunged through its wall, the trocar was then removed, a small rubber catheter, No. 16 French scale with the tip cut off, and which had been found exactly to fit the cannula was passed through the cannula and the cannula withdrawn. A stitch was then inserted to insure the catheter remaining in its place and the abdominal wound closed around the catheter. With this temporary drain the jaundice cleared up and in periods ranging from 10 days to 3 weeks the patients condition was found to have improved enough to make them fairly safe risks. Then the desired operation, removal of the stones from the common duct, drainage of the duct by a T-tube and cholecystectomy was done on a patient with a fair degree of tolerance. I recommend this procedure in all cases of the type described.

When an operation has been decided upon the next step is to systematically prepare the patient for the ordeal. A definite reduction in the operative mortality can undoubtedly be made by scrupulous care in this pre-operative preparation. It should be certain that every physiological function is at its best or as perfect as it is possible to be made with the pathology present. The condition of the heart, the kidney function and all the other important bodily functions should be known and in as good working order as it is possible to make them. The dehydration and acidosis so likely to follow such an operation should be anticipated by voluminous ingestion of fluids and carbohydrates for at least two days before the operation. This should be done in all cases irrespective of the physical condition of the patient.

In the very serious cases with profound jaundice much more is necessary. It is highly important that the coagulability of the blood be brought to normal if possible, for these subjects ooze blood from all cut surfaces and are in such a condition that every drop of blood lost is serious. Walters method of injecting 5 cc of a 10 per cent solution of calcium chloride intravenously for 3 successive days preceding operation has proven very useful in increasing the coagulability of the blood and I am using it in all jaundiced patients.

I am also having Van den Bergh quantitative tests made daily in these cases and if there is at any time a definite falling off in the amount of bilirubin in the blood I seize this time for the operation if the other conditions are favorable.

The low blood pressure in jaundiced patients is also a matter to cause anxiety. Aside from the use of heart tonics I have found no method of combating this. I have noticed that the low kidney function and the low blood pressure usually go hand in hand and that when there is improvement here there is also likely to be a lower bilirubin content in the blood. In a low kidney function I am not satisfied with the phthalein test alone, but have the non-protein nitrogen computation made as well.

A goodly number of our cholelithiasis cases have diabetes and before they are operated the glycosuria and blood sugar should be corrected by diet and insulin and a certain amount of sugar tolerance established. Since insulin has been given to us I have had little trouble with diabetic patients, and strangely, after being relieved of their gallbladders the diabetes is usually much more easily controlled.

After proper preparation the next step of paramount importance is the care and skill with which the details of the operation are carried out. Surgical technique spells much both in the operative mortality and in the degree of relief to be expected. The details of the operation will not be given here but it is imperative that the intra-abdominal tissues be treated with meticulous respect. There is to be no rough work. The stomach and intestines are to be pushed aside and protected from the field of operation by large pads wrung out of hot normal salt solution. When once adjusted they should not be disturbed until the intra-abdominal work is completed and the time has come to close the abdominal incision.

The liver should be handled gently and the gallbladder and ducts be exposed as completely as possible in order to insure nicety and exactness and carrying out the details of the work. Examination of the ducts should be thorough to insure against overlooking a stone and carried out with the greatest gentleness to avoid trauma. When possible the cystic duct and cystic artery should be isolated and ligated separately and the gallbladder dissected from the liver from base to fundus. Occasionally it is practically impossible without unwarrantable force to rotate the liver and expose the gallbladder and ducts in the manner indicated. When such a condition is met I wish to enter my protest against undue force being used. It is better to work at a disadvantage, separating the gallbladder from the liver from fundus to base and ligating the cystic duct and cystic artery in the depth of the abdominal cavity than to traumatize a liver held by short ligaments as I have seen it done by otherwise skillful surgeons.

It is impossible to refrain from saying a word about drainage. I have seen many neat delicate operations marred by thrusting in 2 or 3 large cigaret or other drains, drains which are not needed if trauma has been avoided and hemostasis is good, which are bound to greatly increase postoperative pain and morbidity and which cannot fail to produce many avoidable adhesions. These adhesions add greatly to the number of imperfect and disastrous end results of which our medical friends complain and which have done much to bring discredit on gallbladder surgery. We do not drain after an ordinary appendectomy. Why drain after a clean cholecystectomy?

For the past 6 or 7 years, in about 75 per cent of my cholecystectomies, the abdomen has been closed without any drainage whatever. In none of the cases in which drainage has been omitted have I regretted its omission. When unusual difficulty is encountered and more than the usual amount of trauma inflicted, or when it is found impossible to completely check oozing from the liver or if any doubt is felt regarding the security of the ligature on the cystic duct or cystic artery a small soft rubber tube drain is inserted and removed in 24 to 48 hours. I am very sure that the smoothness of convalescence is enhanced, the period in the hospital shortened, the number of postoperative herniae lessened, and the percentage of symptomless end results increased when drainage is not used. I am not yet ready to recommend omission of drainage in all cases. The decision of when to drain or not to drain must be left to the judgment of the operating surgeon, but am satisfied that with the passing years less and less drains will be used.

After incision has been made in a supposed gallbladder disease it is sometimes perplexing to determine whether the organ is sufficiently diseased to account for the symptoms and to warrant cholecystectomy. There is no doubt most of us have removed normal gallbladders under a mistaken diagnosis. The less frequently this occurs the better will it be for the patients and for the reputation of the operation and of the operator. There is also no question that many gallbladders really diseased have appeared so normal and the gallbladder retained when it has really been the cause of all the symptoms. A situation of this kind sometimes tries a surgeon's metal to the utmost. Fortunately, most pathological gallbladders have enough of the criminal look to be condemned on sight, or at least as soon as the operator's sense of touch has been made use of, but occasionally a gallbladder has such a normal look that a very thorough examination is required before one can decide for or against its removal. I recall one recent case where the pre-operative studies had made gallbladder disease absolutely conclusive, but the organ looked perfectly normal in color, size, and tension. After squeezing it for a time to empty it of bile, as it began to collapse many very small stones were discovered which were utterly non-palpable as long as the organ was full of bile. A cursory examination of this case might have lead to the conclusion that a diagnostic error had been committed and the patient remained unrelieved.

In examining a gallbladder to determine if it is pathological a few definite things to be looked for may help in arriving at a correct conclusion:

1. Inspection of a normal gallbladder reveals a slate-blue or greenish tinge quite uniform from fundus to neck. A whitish color throughout or in patches, or mottling of white or gray indicates a fibrous deposit in the muscular and elastic tissue resulting from inflammation. If the inflammation is of long standing patches of fatty deposit are often found distributed over the gallbladder wall.

2. Abnormal thickening of the wall or a marked variation in its thickness indicates the results of cholecystitis.

3. Even when stones are present they are often not palpable if small and if the contents are under tension; they will become palpable when the gallbladder is collapsed either by pressing the bile out through the ducts or by aspirating it.

4. Pericholecystic adhesions are the result of inflammation of the gallbladder with invasion of the peritoneal coat or inflammation of a contiguous organ. If the adhesions have resulted from a gastric or duodenal ulcer they may have produced no intrinsic pathology of the gallbladder wall and after the adhesions are freed the gallbladder may be entirely normal and symptomless. On the other hand the infection from the ulcer which caused the adhesions may have penetrated the wall so that normal function will never be regained. This is often a difficult question to determine: If the adhesions have been caused by a migration outward from the deeper coats of the gallbladder it is obvious that cholecystectomy is necessary.

5. Definite presence of hepatitis manifested by white patches or white lines on the surface of the liver characteristically more abundant contiguous to the gallbladder and gradually fading in the ratio of the distance from the gallbladder are plain sign-posts of cholecystitis.

6. Induration and thickening of the head of the pancreas is almost equal proof of cholecystitis. I am not willing to go so far as to assert that pancreatitis is always secondary to cholecystitis but am convinced the exceptions to this rule are so few as to be negligible.

7. Another sign-post of cholecystitis is enlargement of the so-called "sentinel gland" that gland located at the angle of the cystic with the common duct. It is the first and most constant drainage basin of the gallbladder and very little cholecystitis can be present without this gland being involved. After many years of observation I think we are justified in concluding that when the "sentinal gland" is enlarged cholecystitis is present.

By carefully evaluating the pre-operative diagnosis and making such an examination as has been indicated after the incision is made, carefully weighting all the points, I feel certain the percentage of error which might result from leaving a pathological gallbladder behind or removing a normal one under a mistaken diagnosis will be reduced to a minimum.

Our medical friends, seeing cases not relieved by cholecystectomy may charge us with removing gallbladders unnecessarily, but it must be remembered that the cases relieved do not consult them. There is no doubt that all of us who operate often have been guilty of error but I am convinced the persisting symptoms are much more often due to neighborhood pathology in liver, pancreas and other upper right abdominal organs than to errors in omission or commission on the part of the surgeon. Incomplete cure is usually the result of late operations after the infection has extended to other organs, and the man who has advised delay is guilty of failure to give proper advice rather than the surgeon who is frequently called in after the case has ceased to be a simple gallbladder lesion which is perfectly curable.

What is to be done with the acute gallbladder? The general consensus of opinion is that the acute gallbladder should be treated conservatively except when gangrene occurs, or acute empyema develops, or the gallbladder wall perforates. That this is good practice is shown by a recent report in the July, 1929, number of *Acta Chirurgica Scandinavica*, by Widerae, of Oslo, Norway. He reports 148 cases of gallbladder surgery. Seventy-six were operated in a stage of quiescence with no deaths; seventy-two were operated during an acute attack with 19.4 per cent mortality. This is a powerful sermon against radical measures during an acute attack.

The literature is full of warnings against operations on the acute gallbladder unless empyema or gangrene occur. Very little is said concerning the treatment during these attacks or how to determine the existence of empyema or gangrene. The treatment that seems most satisfactory is much like that for acute salpingitis; rest in bed, much fluid by hyperdermoclysis and the Murphy drip, complete rest of the stomach, hot or cold packs, and morphine to control pain. Under such treatment most of the cases begin to improve in 24 to 48 hours. This is manifested by less pain, a lower temperature, a drop in leucocytosis, and less tenderness over the gallbladder region. If this amelioration does not occur, but the temperature runs higher with more pain, a higher leucocyte count and the patient takes on the appearance of severe sepsis, it indicates the disease is growing worse and this should be a signal for immediate operation. Rapid drainage of the empyemic or gangrenous gallbladder should be made, doing this with as little disturbance as possible and deferring cholecystectomy until the acute infection has subsided and the patient is in condition to bear severe radical surgery with better chances for a favorable outcome.

This article will not be complete without some definite statement in regard to operative mortality of cholecystectomy and the end results obtained.

Recently I sent out a questionnaire to determine the results of 160 consecutive gallbladder operations, all done at least 2 years before. There were in all 6 deaths a mortality of 3¾ per cent. Strange as it may seem, cholecystectomy was done 156 times with 4 deaths, a 2.5 per cent mortality, and cholecystostomy 4 times with 2 deaths, a 50 per cent mortality. This does not mean what it seems to imply. Cholecystostomy was done only in extreme cases where the surgical risk was tremendous. In a careful analysis of the fatal cases I am not sure one of the deaths following cholecystectomy might have been avoided if I had been content to do only a drainage operation.

Deducting the 6 fatal cases the questionnaire was sent to the 154 patients who had survived. Answers were received from 144 and it is from their post-operative condition that the conclusions on end results are based.

In order that we may have a common understanding of the results I wish to state exactly how the cases were classified. Based on their condition they were put into four groups as follows:

Group I. Cured if no symptoms are left to remind the patient of his former trouble.

Group II. Relatively cured; if relief has been obtained from all the more disagreeable symptoms, but there is an occasional reminder of the former trouble, as belching or fullness of the stomach.

Group III. Improved; when disagreeable symptoms still persist, but where the condition is definitely better than before the operation.

Group IV. Not improved; if the patient reports himself no better than before operation.

With the meaning of these groups in mind the following table will show the results gleaned from the answers to the questionnaire:

Number of answers received	144
Number cured	100, or 69.4%
Number of relative cures	31, or 21.5%
Number improved	7, or 4.9%
Number unimproved	6, or 4.2%

There has been a question whether the cases with gallstones do not offer a better prognosis than when gallbladder infection is present without stones. So small a series is unsafe to base sweeping conclusions on, but it is offered for what it is worth.

Number of cases of cholelithiasis	69
Number of cures	55, or 79.7%
Number of relative cures	10, or 14.5%
Number improved	3, or 4.3%
Number unimproved	1, or 1.5%

Number of cases of cholecystitis	75
Number of cures	45, or 60.0%
Number of relative cures	21, or 28.0%
Number improved	4, or 5.3%
Number unimproved	5, or 6.7%

The fact that the percentage of cures and relative cures of the cases of cholelithiasis is 94.2 and of the cases of cholecystitis without stone is only 88 per cent gives food for thought. I am positive that a genuine inflammation existed in all the cases classified as cholecystitis, for that was obvious macroscopically and all were verified by the pathologist. It is my opinion that in the cases of frank cholecystitis other neighborhood pathology is largely responsible for the post-operative symptoms. In many cases of gallstones, the stones produce the symptoms and in many the infection has disappeared and sometimes apparently stones form when there is only a minimum amount of gallbladder infection. I do not think this opinion has been advanced before but I believe the cases of infection alone, on the average, present a severer type of infection, one more liable to be complicated by neighborhood infections, than when stones are present. To explain this opinion I believe stones are most frequently the result of superficial mucous membrane infections while the cases of cholecystitis without stones are many of them infections of the deeper layers of the gallbladder wall with little or no involvement of the mucous lining. If this theory is correct it explains why the results of cholecystectomy when stones are present are better than when the gallbladder is infected without stones.

We have now come to the chief object of this paper which is to find an answer to two questions: (1) How may the operative mortality of gallbladder operations be further reduced? (2) What pathology prevents complete cure, and can the type of the operation or the time it is done improve the end results?

Careful pre-operative preparation, selecting the most favorable time for executing it, great care in administering the anaesthetic whether it be general or local, gentle handling of the structures with the minimum amount of trauma, careful protection of the surrounding viscera during the operation, as much speed without haste as is compatible with good work, a minimum loss of blood and complete hemostasis, and with as little drainage as is consistent with the conditions present will go far to lessen the mortality. But one may say, "I do all those things now." Very true, but all of us can improve ourselves a little and redoubling our efforts along these lines will result in saving some lives that otherwise might be sacrificed. It is often a very little thing that determines life or death in these major operations and no detail is too trivial to be disregarded.

I believe the three all important reasons for unsatisfactory end results are: (1) some blocking, complete or incomplete, of the biliary ducts, (2) post-operative adhesions, (3) other pathology, usually the result of prolonged gallbladder infection, which is not cured by cholecystectomy.

(1) The utmost care in not leaving behind an undiscovered stone in the common or hepatic duct and seeing to it that the ligature on the cystic duct is not so near the common duct to produce kinking will insure free unimpeded egress of the bile from the liver through the ducts to the duodenum.

(2) Leaving the right upper quadrant free of adhesions is not so simple though much can be done in this direction. If pericholecystic adhesions are found at operation it is well known they will recur post-operatively. Their clean division and the covering over the raw surface with peritoneum as far as possible and frequent change of the patient's position in bed during the first few postoperative days is about all that can be done to control their formation. Gentle handling of the viscera and careful management of the stump and producing the least possible trauma while loosening the gallbladder from its bed in the liver fossa will leave a minimum amount of adhesions. As we all know, a seepage of blood around the stump and in its neighborhood after the conclusion of the operation is a fruitful source of adhesions. Too much care in securing absolute hemostasis cannot be taken. All definite points of bleeding can be controlled by the use of very fine plain catgut sutures or ligatures. The general parenchymatous oozing sometimes noted can be completely controlled by the patient use of hot gauze compresses and no surgeon should be in such haste to close the abdomen that he will not take the time to insure against any post-operative oozing. Most of the massive adhesions which follow gallbladder operations are doubtless due to too much enthusiasm for drainage. Big packs of gauze, large cigaret drains and rubber tubes have produced much havoc in the past and their opportunity for making mischief and destroying the effects of an otherwise good operation has evidently not entirely passed for I have seen otherwise good surgeons make use of them only recently. The ideal method is the total omission of drainage. I see no more reason for draining the gallbladder pocket after a clean cholecystectomy than for draining the pelvis after a clean uncomplicated hysterectomy. If there has been an unusual amount of trauma inflicted, if there is a question whether it has been possible to ligate the cystic duct securely, if an aberrant bile duct is found coming out from the liver fossa after enucleating the gallbladder from its bed, or if in spite of all our effort we feel skeptical about the hemostasis, a very small drain may be placed—but it ought to be very small and it should be removed at the end of 24 to 48 hours.

(3) The third reason for incomplete cures after gallbladder operations and probably the most frequent at the present day, I believe to be due to extensive hepatitis, pancreatitis and other pathology which would not have occurred if the gallbladder had been removed before it had had time to infect and reinfect these viscera over and over again through a long period of more or less stormy years. I believe the sooner the profession assimilates this fact,—that a chronically infected gallbladder does not get well of itself or by any medical treatment, and that in addition to producing many painful and disagreeable symptoms intrinsic in its own pathology, it is ever a focus for infections of other organs which cannot be cured, the better will it be for the reputation of the profession and for our patients. I am convinced that half of the bad results in gallbladder surgery is due to the very great delay in operating rather than in anything intrinsically wrong in the operation itself.

FEET: GOOD, BAD AND INDIFFERENT*

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> Sore heads and sore feet
> Are awful folks to have to meet.
> But sore feet make sore heads
> That never rest in healthy beds.
> —Attributed to An Unknown Seer.

The feet are essential implements of locomotion but in this age of comfort and modern convenience the human foot is becoming more of a liability or disability—a sort of necessary nuisance to get from the house to the car, or from the curb to the elevator, and from the elevator to the office, and then to the swivel chair for the day's undertaking. It is not surprising that with the little use one gives the feet, that they should have such a far reaching influence on the career and the character and general health of the owner.

The evolution of the human foot has been a gradual process and it has achieved a highly developed, specialized mechanism consisting of scientifically arched bones, strong ligaments, and still stronger muscles that make it capable of carrying heavy weight and achieving remarkable speed and of withstanding a tremendous amount of abuse. The Great Creator never intended the feet for swivel chair antics, back seat driving, or pavement or sidewalk navigation. Modern civilization has removed from the feet all but their minimum purpose, therefore, they suffer greatly from the lack of use, misuse and deforming appliances, such as ill fitting shoes, that they are forced to endure. This is the reason why 85% of the men examined for military service had disabilities of the feet; also the reason why only one out of eight children in a recent survey had normal feet.

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*Read before the Lancaster County Medical Society, Lincoln, February 18, 1930.

Foot disability is increasing so we see more people suffering from deformities of the feet of a pathological nature than ever before. This is principally due to our type of living, lack of proper exercise for the feet, clothing or shoeing them improperly, and a lack of personal hygiene so far as the feet are concerned. The care of the feet should not only secure the sincere consideration of the healthy owner but the diseased as well, for there is always a possibility that the pathology may have some definite relation to his feet; although the findings may not necessarily be subjective they may render remote objective findings. Therefore, the general practitioner in making an examination should routinely examine the feet with even greater care than the specialist whose interest too often is blinded by subjective complaints of foot disability. The feet are far too often overlooked during the enthusiastic physical examination of the trunk and the clinical, chemical and x-ray examinations and analysis of the patients symptoms. Even after all this there are times when the dainty shoe holds the key to cinching the diagnosis.

We are familiar with the symptoms of cardiorenal disease as they are manifest in the feet and ankles, but it is surprising how often patients come in complaining of painful feet, which are found upon examination to be puffy. The patient probably has been taking a good tonic because they did not feel well, but with no recognition of the real etiology and pathology on the part of their physician. The same is true of other conditions, vasamotor, circulatory, nervous, static, and postural pathology. These are so easily mis-diagnosed simply because a thorough examination was not made.

To illustrate: Two women had received tampon treatments for months, the one for backache and female trouble, the other for backache and displacement of the womb. They came to me on account of foot disabilities. Their findings from an orthopedic standpoint were the same—weak pronated feet with faulty posture. The symptoms were immediately preceded by a pregnancy and normal labor. With corrective treatment and exercise the backache and pelvic disturbances disappeared.

Another illustration—that of a man forty years of age who had pain in his kidneys and was told that he had a bad infection in the pelvis of his kidneys and that his prostate was infected and enlarged. He had received what he called kidney washings every week for four weeks prior to coming here, but with all this he had for a year some slight foot and leg pain. His doctor had continuously ignored his complaints in this direction. On examination the urine was negative save for an occasional epithelial cell. I had the temerity to examine the prostate more from curiosity than anything else as his history did not seem to savor of prostatic affliction and I found no marked enlargement and the secretion obtained according to the report of a competent pathologist contained nothing but healthy motile spermatozoa and no gram negative organism. He did have painfully weak feet and bad posture and with these corrected the symptoms for which he was so ardently treated disappeared.

Of course, these are extreme cases; there are a vast number of patients treated for backache, sacro-iliac strain, pelvic and abdominal conditions that are directly traceable to deformities of the feet and were regular routine examination of the feet made, one might find the missing links in the diagnosis of a remote condition.

Convalescence from a protracted illness often brings out symptoms of foot disturbances because the muscular structures have lost their normal tone and have given way to minor deformities of the bony structure, whereas in health they were able to compensate for these deformities. It behooves the attending physician to be alert to such possibilities and advise proper protective measures during this period, for changes that occur during such a time are often difficult to correct later when a well established structural deformity has occurred.

From childhood to adulthood healthy feet make for a healthy mental state. A cheerful outlook on life often influences the success of the individual attainment as well as lending a definite impetus to good health. While on the other hand, from painful, tired, deformed feet emanate the opposite mental attributes as backwardness, general lassitude, laziness, inefficiency, irritability, fretfulness, and mental depression—all of which have a definite influence on the general physical fitness of the individual, making him more susceptible to disease or affecting his opportunity or outlook towards life.

The time to treat foot deformities is before they occur. It is a process of education of the parents and prospective parents of a realization of the child's foot needs from birth on through life, and it is surprising what influence such teaching has on the parents themselves and their own foot hygiene.

The time to begin educating the human foot for modern usefulness is when the child is born. At this early period of life most people have the impression that the principal purpose of the baby's foot is to kick off the blanket and covers and that it is the principal duty of the parent or nurse to keep the little feet snugly covered with wool stockings and well tied down in such a way that no opportunity will be given for them to get cold. They are right—the healthy baby always keeps his feet high in the air, he would rather get rid of covers or blankets or anything that limits the activities of his legs or feet. This is good exercise for him.

When the baby's wardrobe is prepared for him numberless pairs of wool stockings are given to the mother for the baby to wear, far more, usually, than the baby can possibly wear out, and about the first thing that is done after the baby's diaper, is to put on a pair of these little woolen stockings—they are pulled up tightly and fastened to the diaper. As a matter of necessity when the stockings become wet they have to be washed and changed often each day. With each washing the stockings become smaller unless they are carefully stretched—yet every day the baby's feet are getting a little larger, and the parents are proud of the progress the baby is making. The mother will remark how hard the stockings are to get on, yet they are put on, and when these stockings are removed the little feet are ridged by the tight covering, blanched by the lack of circulation which has cramped the baby's toes and limited his activities, thus preventing the normal growth and development of muscles, ligaments and bones.

If the child is to have strong, well shaped feet without deformities of the toes, loosely fitting stockings must be worn. Constriction, pressure or tightness about the little feet is detrimental. It would be far better to throw away these many pairs of stockings as they grow too small for the child's feet, or to give them to some other infant, than to have their impress rest on the child's foot for years to come. Infant's stockings should always be too long for the foot, at least an inch beyond the end of the toes. They should not be tight in circumference as that will limit the movement of the lower extremities.

Infant shoes are preposterous. As physicians it is our duty to discourage the use of any type of shoe until the child is ready to stand on the floor. If there is need of extra warmth, two pairs of stockings are far better than to lace the little foot into an ill fitting leather pouch for so many of these shoes are no more than that. A child need not be encouraged to walk too early. At ten months if a baby stands at its crib it can do itself no harm provided properly fitted socks are worn, but when he has learned to balance himself and when he begins to take steps the baby's feet must be prepared for the civilization in which he is going to live. This civilization requires shoes for the protection of the feet, therefore, from the beginning the shoes must follow the contour of the baby's feet. They should be a full half to three-quarters of an inch longer than the child's foot, made of soft pliable leather, all the parts of the shoe should be flexible, with laces well above the ankle joint, and the sole should be heavy and strong enough to make the shoe its shape no matter what antics the baby's feet might perform. The sole and heel should be wide, extending out beyond the outline of the foot. All these precautions in regard to the makeup of the shoe allow the child free movement of the muscles, arches and bones of the foot and protects them from injury and abuse. Fortunately of recent years the leading shoe manufacturers have caught the idea and in making normally shaped shoes for little children and are cooperating with parents in an effort to give the child proper sizes and normal shapes, instead of the fancy buttons and lacy straps that were so prevalent a few years ago.

While the baby is wearing his first shoes, or any other shoes, he must wear a pair of socks that meet similar requirements. They must be long enough in the toe, they must be wide enough, but the foot of the sock must not be too long as it then is likely to roll up at the heel and cause irritation of the tender skin. As children grow older so often bruises, blisters and irritations develop from stockings that are too large and roll up against a part of the foot. Holes and patches in stockings sometimes are responsible for such conditions.

It is well to change stockings daily; there is often a tendency towards dampness, perspiration or collection of secretions that may lead to chronic disturbances unless carefully watched. Such conditions often tend to shrink or stiffen the stocking causing vasomotor disturbances and sweaty feet to develop. Careful daily bathing of the feet is essential.

Of course, these first shoes will never be worn out, the little feet will outgrow the shoe long before the leather is worn very much but on any evidence of binding they should be discarded. Each successive pair of shoes should be carefully fitted to the child's feet particularly in reference to length and width required. The same arduous precautions should be accurately followed throughout life. Parents often have the habit of sending to the store for a size larger shoe. This is a very dangerous custom. The shoes must be tried on to obtain an intelligent fitting. Whenever they become too small and tend to limit the muscle action or when the great toe starts to touch the end of the shoe it is time for the shoes to be discarded.

As the child grows older it should have at least two pairs of well fitting shoes. Parents should not buy a pair of Sunday shoes as there is too great a possibility that such shoes will be too small before worn out; but with two well fitting pairs of shoes the child can change frequently and allow the leather and lining to dry out as this is quite essential to the sanitary care of the feet.

Then there comes a time during adolescence when there is a tendency on the part of the child to be less active. It is undignified for them to get out and play as other children do, and they would rather sit around the house—they are no longer children—they are over night changed to young men and women and they must act like grown people. It is now that the foot disabilities that were developed early in life become more manifest, it is now also that new foot disabilities develop, due to the fact that they want to wear small, shapely, pretty shoes with high heel features. Such shoes are surely deforming appliances and should not be tolerated, at least not until the foot is fully developed. It is at this time that corns, calluses, warts on toes, bunions and local circulatory disturbances are likely to develop. This period of a child's life should be closely guarded, as much care should be taken by the parents in selecting the right type of shoe as would be taken in selecting the appropriate hat or dress, but strange as it may seem this is the very period of life when a child resents such action on the part of its parents. If the parents have the courage of their own convictions and the perserverence and patience to carry a child safely through adolescence, with good strong healthy feet, the chances are that good common sense will prevent that young man or woman from allowing foot disabilities to develop during adulthood except as constitutional disturbances cause complicating conditions of the feet.

In a careful survey of some 1,235 school children in Minnesota only 140 had normal feet, 515 of these children suffered from weak arches, 708 had ingrowing toe nails; 496 were wearing ill fitting shoes and 540 would in the future have more drastic trouble with their feet due to the way they walked and stood and to their general posture, that is, they turned their feet out too much. It is during this growing period that most of the deformities of the feet develop. The mother will say that her baby was always flatfooted. Of course it must be remembered that most infants appear flatfooted just as they appear bow legged, but with proper care usually the feet will develop normal arches and shape and the legs will become straight and strong.

The purpose of this discussion has been, first, to bring to your attention the important relation between the pathological foot and the pathological patient, whether his constitutional pathology is mental or organic. And second, thereby to arouse your interest in the well founded fact that normal feet are quite essential to good health and happiness. And lastly, the most important thing in the care of the feet is their proper development from babyhood through childhood and through adolescence—for I am firmly convinced that if by the time one reaches maturity they have no foot trouble or disability, common sense will prevent them from ever developing any foot disability.

DIVERTICULA OF STOMACH

Joseph C. Bell, Louisville, Ky., and Ross Golden, New York (*Journal A. M. A.,* February 22, 1930), give a brief discussion of the condition itself and a report of four cases. In summarizing they assert that gastric diverticula are rare and are seen most commonly in the region of the cardiac orifice. The etiology of this condition is still an unsettled question. Diverticula of the cardiac region are frequently symptomless and in themselves seldom justify surgical intervention. Those in other parts of the stomach often call for surgical treatment. The roentgen observations, in most cases, are characteristic, and in many instances the diagnosis is made by this means.

PROGRESS OF SURGERY

(Review of the Literature of the Last Six Months)

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NECK

Lahey(1) thinks that thyrotoxicosis leaves the normal heart relatively unharmed, but has a selective action on a previously damaged heart. He states that the cases with previously good hearts who die in acute thyroid crises have none of the clinical indications of failing compensation, as orthopnoea, oedema, liver enlargement, etc. If this type of patient survives there is no permanent heart damage, if they die no heart damage can be found at autopsy.

Many cases of cardiac decompensation due to thyrotoxicosis have a form of hyperthyroidism characterized by apathy. This may be overlooked by the internist. The thyroid should be suspected especially in cases of cardiac decompensation which persists in spite of appropriate therapeutic measures and also should be thought of in cases of auricular fibrillation.

Decompensation is not a contraindication to thyroidectomy. He reported 142 such cases with only five operative deaths. Eighteen are untraced. Fourteen have died since operation. Of the 101 thyrocardiacs operated upon and now alive and their condition known, seventy-six have full return of the cardiac function, nineteen have persistent auricular fibrillation, four are partially disabled and nine are completely disabled. Toxic adenomata are no more apt to cause cardiac failure than is primary hyperthyroidism or exophthalmic goiter.

Oppel(2) considers ankylosing polyarthritis (by this term he means both Bektereff's disease and that of Strumpel-Marie) as due to hyperfunction of the parathyroids. He quotes others as well as work of his own cases to show that cases with ankylosing polyarthritis have an increased blood calcium, a decrease of the electro-excitation of muscles; an increased viscosity of the blood, and a normal blood potassium. He advises parathyroidectomy for these cases. In forty-nine with this operation he found no improvement in sixteen and improvement in thirty-three. The most striking result is the disappearance of the sensation of stiffness of the joints. After the operation the ankylosis should be relieved by orthopedic measures.

THORAX

The usual view of pulmonary atelectasis is that the cause is quiet or suppressed respiration with bronchial obstruction. Van Allen and Adams(3), working on normal dogs, find that straining respiration is necessary. They determine that valvular obstruction produces atelectasis much more rapidly than does total obstruction, but there is no evidence that valvular obstruction occurs spontaneously in man. Pent up bronchial air is probably lost from the lung by blood stream absorption. Atelectasis spreads in the lung lobe from the hilus toward the periphery and not in the opposite direction, as is commonly supposed. Decreased intrapleural and intrabronchial pressures occur characteristically in obstructive pulmonary atelectasis. They suggest estimation of the intrapleural pressure should be a simple and reliable clinical diagnostic procedure.

In a very extensive work, Coryllos(4) considers post-operative bronchitis, atelectasis, broncho-pneumonia, and pneumonia are simply different stages or manifestations of the same morbid conditions. Prophylactically he advises at the end of an operation, especially abdominal, to have the patient breathe a mixture containing 5 to 10 per cent carbon dioxide and oxygen. This should be continued to keep up the deep breathing produced for three to five minutes. This should be repeated every two to three hours for two days on the patient in his room accompanied by frequent change of position. If consolidation has already developed he uses a tent or chamber with continuous oxygen and intermittent carbon dioxide administration. In cases of delayed atelectasis or when the lung appears drowned in its secretions and when cough and expectoration are neither present nor can be induced by rolling the patient from side to side, bronchoscopy should be induced. It is a bold measure but may be a life-saving procedure.

In studying ten cases of post-operative massive atelectasis, Wilmer, Cobe, and Lee(5), found all ten of them to be allergic. In a note they state that since the reading of their paper they have seen a report of Dixon from England in which he discusses the desensitation by peptone before laparotomy. Since then the authors have been doing this with 0.3 grains of peptone and 2 cubic centimeters of normal saline fourteen hours before the anesthetic was given. They have had none of these cases develop pneumonia.

BREAST

From a study of whole microscopic sections of carcinoma of the breast, Cheatle and Cutler(6) believe gelatinous carcinoma is more common than is generally supposed. It begins and ends in the epithelium of the breast. Gelatinous degeneration in a carcinoma of the breast does not necessarily imply a low degree of malignancy, as is generally supposed. The clinical course of these tumors is determined chiefly by the precise biological properties of the epithelial elements they contain, and does not depend on either the presence or extent of the gelatinous degeneration.

Hatfield(7) found forty-two fully recorded cases of fat necrosis over or in the breast with the production of a tumor. He recorded three other cases, making the total forty-five. The average age was fifty, the youngest being nineteen years of age. There was no constant relation to lactation, but there was a definite history of trauma in 40 per cent. Pain or tenderness are not common in it and there is no discharge from the nipple. However, it may simulate carcinoma in being stony hard, is adherent to the skin in 52 per cent, causes retraction of the nipple in 10 per cent, and may cause enlargement of axillary glands which, however, are soft. It is opaque, white, and dull, and often there is central liquefaction with the production of a yellowish oily fluid. There seems to be no infective factor in its production.

ALIMENTARY TRACT

In a report by Hurst and Venables(8), in thirteen cases of gastric ulcer, one had hypochlorhydria, two a high normal curve, and ten hyperchlorhydria, whereas in twenty-six cases of duodenal ulcer five had a high normal curve and twenty-one hyperchlorhydria. There are surprisingly little difference between the results in gastric and duodenal ulcer. They think the larger number of cases of low curves in gastric ulcer is due to the fact that the gastritis in gastric ulcer was found by Konjetsny to be more severe and more extensive than in duodenal ulcer. They think that duodenal ulcer rarely, if ever, occurs except in individuals with the hypersthenic gastric diathesis, which is characterized by the association of hyperchlorhydria with a rapidly emptying stomach.

Digby(9) states that biliary stones in the Chinese are usually formed in the intrahepatic bile ducts rather than in the gallbladder as in our race. The gallbladder is normal so is dilated which violates Courvoisier's law. A syndrone with five cardinal symptoms is produced. 1. Pain in epigastrium and right hypochondrium. 2. Enlargement of liver and gallbladder. 3. Chills and rigors. 4. Jaundice. 5. Albuminuria. The treatment is choledochostomy and the gallbladder is not removed.

The concentration of amylase in adult human blood plasma was determined in sixty patients by Elman, Arneson, and Graham(10). They used a new method based on the rate of diminution of the viscosity of a starch solution. The normal was found to be 4.3 to 6.8 units. Disease of the pancreas with obstruction of the ducts causes an increase in the blood amylase. Atrophy of the acini, which may be a late change, results in a decrease of the blood amylase. This test is of advantage in diagnosing pancreatic disease or in excluding it in suspected cases.

Hermann and Higgins(11) studied intestinal permeability in obstruction of the colon in dogs. At the onset they thought that the tissues of the wall of an obstructed colon would be thoroughly permeated by the particles of graphite. This would offer an explanation for the incidence of peritonitis resulting from the handling of the bowel and lightly injuring the serosa during operative procedures. Under the conditions of their experiments, however, no such penetration occurred. Rather there was a definite penetration of the graphite into the blood vessels of the mucosa and subsequent distribution by the portal blood stream. The only conditions in which such vascular penetration occurs are obstruction, with injury to the mucosa. It appears as if the distending pressure in obstruction actually forces the particles of graphite into the blood stream, but only in the presence of ulceration. Ulceration of the mucosa, without the added factor of marked obstruction does not lead to this result.

URINARY TRACT

For twenty years Coffey(12) has been experimenting with the technique of implanting the ureter into the bowel. He has just developed an improvement on his previous technique consisting in a suture transfixing the ureteral wall and the intestinal mucosa. The valve principle is the same as he has previously done. In this way the bowel mucosa is not opened. The suture tears through in 24 to 48 hours at which time urine is discharged into the bowel.

D'Annoy and Zoeller(13) report a case of primary carcinoma of the ureter and review the literature on the subject. There are forty-eight cases reported. Twenty-eight of them were papillary, and twenty non-papillary. The incidence is about equal in both sexes, with the greatest number occurring during the sixth and seventh decades of life. The lower part of the ureter is more frequently the site of the lesion. Concurrent lithiasis was present in six cases. Most think that the so-called benign papillomas of the ureter and other parts of the urinary tract must always be regarded as highly suspicious growths so far as actual, as well as potential, malignancy is concerned.

Young(14) states that intraperitoneal resection of the bladder has now had the test of years, and is undoubtedly the method of choice in tumors of the vertex of the bladder. In tumors of the posterior wall of the bladder not involving the vertex the intraperitoneal operation is often unsatisfactory owing to inaccessibility. Young has employed a new procedure in which the tumor of this region with its peritoneal coat is resected entirely through an intra-vesical operation. The technique of this operation is described in detail in the article.

EXTREMITIES

The value of iodized oil, as lipiodol or iodipin in the diagnostic visualization of bronchiectatic cavities and spinal canals is well recognized. Kreuscher and Kelikian(15) have injected it into seven knee joints and three hip joints for diagnosis. X-ray immediately after its injection gives valuable information concerning the formation of the joint cavity, its capacity, the communication with it. Also the more nearly normal the joint, the more evenly is the oil distributed. Patchy distribution indicates pathology.

Experimenting on animals Rogers and Hemingway(16) found periarterial sympathectomy had only a very transient effect on vasodilation. Division of the main sympathetic trunk produced a greater and more lasting vasodilatation.

White(17) suggests blocking of the sympathetic nerves with procaine as a useful diagnostic procedure to determine (a) the quantitative increase in surface temperature that can be produced by operation on the sympathetic ganglions, and (b) the effect of sympathetic ganglionectomy on obscure pain which is suspected of being referred over the sympathetic nervous system.

Reichert(18) states that lymphoedema is differentiated from vascular or pitting oedema by its restriction to and induration of the skin and subcutaneous tissues. They say elephantiasis is caused not by lymph and venous stasis alone, but by its association with inflammation due to infection or toxemia. The element of inflammation is the one essential factor in the production of elephantiasis. Soft tissue roentgenograms of an extremity present a characteristic picture in elephantiasis and elephantoid conditions. The roentgenographic trabeculation of the hypodermal layer is produced by the fibromatosis in this tissue.

Experiments of Pearse and Morton(19) show accelerated union of bone in the presence of venous stasis. This agrees with reports from the literature and from clinical cases they report.

MISCELLANEOUS ARTICLES

McNealy and Willems(20) conclude that the absorption of rectally administered glucose probably depends on the passage of the enema into the ileum through an incompetent ileocecal valve. Such a condition is not physiologically normal, and at best only small amounts of glucose can be forced into the blood stream this way.

Pressman(21) made a study of the absorption of glucose given per rectum on seven fasting patients. This resulted, contrary to the usual idea, in a fall of blood sugar. This fall is greater than that when saline is injected instead of glucose. The absorption of glucose from the rectum is sufficiently slow to permit fermentation to take place, 25 per cent of the introduced glucose having been recovered in stools four hours after a glucose enema.

In a study of the effect of a high protein diet on the velocity of growth of fibroblasts in the healing wound, Harvey and Howes(22) find the latent period uneffected. However, once growth has started the velocity of it is distinctly increased and the maximum strength of the healing wound is reached some two days earlier than with a standard diet. The experiments were on rats.

There is a chemical difference between the nucleus of a cell in mitosis and the nucleus of a cell in the resting condition. Hammett showed that the most important, in fact, the essential chemical difference is a rearrangement of the sulphur in the molecules, so that this element appears in the chemical group sulphydryl; i.e. SH-. Working on this basis Reimann(23) has been using a solution of thiocresol applied locally to stimulate wound healing. The results in a limited number of cases and experimentally in animals, seem to be very good.

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DERMATOLOGIC CLINICS

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Case 11. M. P., girl, 20 years of age, has an eruption which is limited to her face and consists of blackheads, discrete inflammatory superficial and deep papules and pustules and scars. The face and scalp are oily. The lesions have appeared more or less continually during the last six years. The patient appears anemic and greatly depressed. She has used home remedies and arbitrary diets without any benefit.

This condition, acne vulgaris, is very common in young boys and girls at the age of puberty. The diagnosis is comparatively easy, if the location, the involvement of the sebaceous glands, the age, and the absence of constitutional symptoms directly due to the skin disease, are considered. The pathology of acne is an inflammation of the sebaceous glands with suppuration and destruction of tissues. Unquestionably both internally or predisposing agencies and locally pyogenic and other micro-organisms are causative factors. The comedones or blackheads are due to blocking of the sebaceous ducts with epidermal debris and dried up sebum. The dark points at their openings are found in scrupulously clean people and are, contrary to the usual belief, caused by pigment and only exceptionally by dirt. The papules are due to inflammatory periglandular infiltration. Suppuration is the sequel of a secondary pus infection.

Acne vulgaris, while not in itself a serious disease, deserves more consideration from the physician for many reasons. The frequently heard advice to leave it alone and it will disappear by itself is absurd. Acne may continue until middle age and meanwhile disfigure the face as badly as smallpox and its conspicuousness with the consequent mental agony will make many a patient a nervous wreck.

The treatment of acne, if carried out properly and consistently, is gratifying. The patient must be warned that it may be months before the face will clear up entirely and that occasional short relapses are to be expected. A thorough preliminary general examination is essential to ascertain the presence of anemia, indigestion, constipation, menstrual disorders and focal infections. Any of these conditions, if present, must be corrected, to make the local treatment a success. Certain foods are usually prohibited, under the impression that they are a direct etiological factor, but outside of the excessive use of carbohydrates and fats, I believe the diet need only be regulated according to the individual requirements. I have not found sufficient benefit from vaccines to continue with them. Incidentally I wish to say that the use of the widely advertised yeast is a waste of time.

The local treatment is most important. I make it a routine to examine the scalp and if seborrhoea is present to institute treatment for it. Seborrhoea of the scalp and acne are usually found together and, unless cleaned up at the same time, are liable to cause relapses. The patients almost automatically touch continually their face with their fingers, to discover new or to pinch and squeeze old lesions. This irritates the skin and disseminates the infection. They must educate themselves to stop this injurious habit.

The advent of x-ray treatment for acne has improved the prognosis both as to time and permanency of a cure. Unfortunately the x-ray is a double-edged sword and should only be employed by skillful and experienced men. Anyone who has seen people go through life with an atrophic skin, telangiectasis, and precancerous keratoses, due to poor judgment and ignorance, will agree that an x-ray outfit should be put in trained hands only.

The second choice of local management consists in frequent washings, expression of the comedones (aseptically and without bruising the skin) opening the pustules and the application of sulphur or its compounds in ointments or lotions to the point of a slight irritation and scaling of the skin. Ultra violet light may produce a dermatitis and exfoliation and be followed by improvement, but this is temporary only.

Case 12. W. J. W., 45 years of age, broke out all over his face, neck, and scalp, a few days ago shortly after patronizing a barber shop. The lesions are numerous discrete round moist erosions, vesicles and pustules. The face is swollen and the eyes nearly shut. Several deep furuncles are present on the neck and one in the right auditory canal. The submaxillar glands are enlarged. The patient feels sick and has a temperature of 100°.

The condition is an infection acquired in the barber shop. The sterilization of the brushes, combs and razors in these places is entirely inadequate and it is surprising that not more such cases are seen. Nothing short of boiling and keeping the above utensils in antiseptic solutions would stop all chances of infections, but as that would spoil the brushes and dull the razors, the remedy is problematical. In trying to make the diagnosis, we think of barber's itch (trichophytosis barbae) and of sycosis vulgaris. The first may be excluded because of the absence of characteristic clinical manifestations, no microscopic evidence of the fungus, and the involvement of non-hairy parts of the face. Sycosis vulgaris is due to follicular invasion by the staphylococcus albus and aureus. It also is, as a rule, limited to the bearded parts of the face, but exceptionally spreads to the scalp. Another staphylococcus infection, impetigo, must be considered. When very extensive, as in our patient, it is met mostly in adults and is commonly contracted in barber shops. It is an interesting problem why the pyogenic cocci produce entirely different clinical pictures at different times. This has led to a great number of names which only complicate dermatology. Sycosis, impetigo contagiosa, Ritter's disease, impetigo staphylogenes (Bochart), staphylococcia, pyodermia, are only a few examples of a burdensome nomenclature all due to the same etiology. Impetigo is mostly a local affection, but in very young infants and in widely spread cases it may cause a systemic toxemia and resemble acute infectious eruptive fevers.

Our patient, having an unusually severe and stormy attack, will be taken care of best by hospitalization. The hair will be clipped very short to permit better management of the numerous lesions of the scalp and to stop spreading of the infection. We will begin treatment with pads, wet with a saturated solution of boric acid, continually applied, until the most acute symptoms are under control. Next a 2% ammoniated mercury ointment will be substituted. Daily soap washings and shaving are important. The furuncles are opened as they form. If the condition should prove obstinate an autogenous vaccine might be helpful. All necessary precautions will be taken to precent transmission of the infection.

IMPORTANCE OF VISUAL FIELDS AS AN AID IN LOCALIZATION OF BRAIN TUMORS

Walter D. Shelden and Walter I. Lillie, Rochester, Minn. (*Journal A. M. A.*, March 8, 1930), assert that examination of the eyes affords significant data both in diagnosis and in localization of tumors of the brain. As this consideration presumes the integrity of the end-organ, it is the duty of the ophthalmologist to correlate any local pathologic condition of the eye with an appropriate alteration in vision and in the visual fields. They cite cases to illustrate the relative significance of the visual fields in the study of tumors of the brain and to show a few of the many examples which such studies reveal.

A CASE OF MELANOTIC SARCOMA

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On August 25th, 1929, this patient came to see me, whose only complaint was a tumor on his back and which greatly resembled the ordinary type of sebaceous cyst. While it felt a little solid for a cyst, I decided to remove it and under local anaesthesia opened the skin, but found I had a solid mass rather than a cystic one. I removed the tumor entirely and sent it to Dr. H. E. Eggers, pathologist at the University of Nebraska, who sent back a report of malignancy.

Upon close inquiry we found that this man had had a pigmented mole at the site of the tumor and that it had been removed with some sort of electrical apparatus, not an x-ray. Following the report of malignancy he was sent to Dr. Tyler for treatment with x-ray. He returned home and one month later returned and took some more x-ray with the result that the wound healed perfectly.

On October 27th, 1929, I was called to see him because of a pain in his right upper quadrant. This pain did not last a long time, did not require an opiate and cleared up entirely without treatment. On the 2nd of November, 1929, after a barium meal as well as barium enemas, we made an x-ray study of his gastro-intestinal tract and did not find anything which pointed to any interference in the tract. These attacks of pain became more frequent, occurring one in two days and later coming on daily so that on November 28th we did an exploratory operation and found approximately a half dozen pigmented sarcomas attached to the gut at various points, none of these, however, going into the lumen of the bowel. After finding these sarcomata we did nothing except to close the wound.

When he left the hospital and went to his home he required a daily hypodermic of morphine and atropine in order to be comfortable. This dosage increased until the time of his death on February 25th, 1930, he was using four and five hypos a day. On the morning of February 25th, about one thirty a. m., he had a sudden attack of pain in his belly with some nausea. This pain was relieved by hypos and he died at five fifteen p. m., the same day. We did a post mortem about five hours after his death.

Upon opening his abdomen we found that the largest tumor, which we discovered at the exploratory operation, had increased in size from about that of a hen's egg to a large round mass about five inches in diameter, involving the transverse colon, the splenic flexure and the descending colon. The smaller tumors had increased proportionately but none were as large as this one. There were two demonstrable melanotic glands in the mesentery. Upon going into the right lower quadrant we found an intussusception in which approximately twelve inches of the ileum had slipped down into the caecum. Upon reducing the intussusception we found another sarcoma approximately the size of a fifty cent piece imbedded in the wall of the gut which was responsible for the production of the intussusception. Apparently the tumor mass had started into the caecum and the peristaltic wave had carried it on down. This particular tumor we resected and sent to Dr. Eggers to be preserved as a pathological specimen. We made incisions into the other tumors and found that our pigmented areas extended all the way through them. A complete check-up of the liver showed no tumors either on the surface or within the body of the gland itself. Both kidneys were normal in size and neither the spleen nor pancreas was involved. Upon opening the chest we found on the upper surface of the diaphragm two or three solid enlargements which were evidently the beginning of tumors at those points. Both lungs were absolutely clear and we could find but two enlarged lymph glands within the mediastinum. As he had had no cerebral symptoms, we did not open his skull. His prostate was normal.

The peculiarity of the whole condition was that all of the metastases were confined within the peritoneal cavity which is decidedly unusual in the ordinary run of melanotic sarcomata.

BULLETIN FROM THE LABORATORY OF CLINICAL PATHOLOGY BRYAN MEMORIAL HOSPITAL LINCOLN, NEBR.

Staff Meeting—October 11, 1929.

Miles J. Breuer, M. D.

The following outline is submitted in order to show how this laboratory is equipped to render assistance in the modern handling of diabetes mellitus.

A. Recognition of the type of diabetes.

1. Recognition of the character of the reducing substance in the urine. Not every sugar in the urine is glucose. But, if it is not glucose, the disease is not diabetes mellitus. Sugars can be most conveniently identified by the Osazone tests.

2. Recognition of hyperglycemia: Glycosuria also occurs in some cases that are not diabetes mellitus; notably in renal diabetes. Unless the fasting blood sugar is increased over about 120 mgm per 100 c.c., the conditions is not diabetes mellitus.

B. Estimation of the severity of the diabetes:

1. Determination of the amount of sugar excreted. With the patient on an accurately known carbohydrate intake, an estimation of the 24-hour sugar excretion gives an excellent idea of the severity of the diabetes. A quantitative estimation of sugar in the urine means nothing and is diagnostically worthless unless performed on a 24-hour specimen while the patient is on an accurately known carbohydrate intake.

2. The modern method of control in diabetes is by blood sugar and not by urine sugar. High blood sugar must be kept down; and if insulin is being given, hypoglycemia must be avoided.

3. The renal threshold for sugar excretion ought to be known to the doctor before the patient goes out from under medical observation and has to depend on his own urinalysis. There are cases which run a high blood sugar without a glycosuria, and in which a sugar-free urine does not mean that the patient is doing well.

4. Blood Cholesterol. Cholesterol serves as an excellent index of the lipoid metabolism, which, if excessive, denotes that the case is not progressing favorably. In cases which persistently run a high blood cholesterol in spite of therapeutic efforts, the prognosis is poor.

5. Acidosis: For qualitative recognition, the tests for acetone and diacetic acid are in common use.

C. Maintenance Control.

1. For adequate nutrition, the patient's metabolic

requirements must be taken into account. In many cases the caloric requirements can be calculated with sufficent accuracy for clinical purposes. In cases where metabolism is atypical, a first-hand knowledge of the metabolic rate by means of the respiration calorimeter is essential.

2. The problem of maintenance is to furnish to the patient's tissues sufficient carbohydrate to keep up his oxidation metabolism at a high enough point to avoid complications. The amount of carbohydrate he will naturally metabolize is readily determined for the 24-hour period by subtracting the quantity of glucose excreted from the carbohydrate intake (see B. 1.). A simple calculation will show whether this amount metabolized is sufficient to take care of the caloric needs of the body. (For calculation, see appendix to Dr. Hilton's staff-report on Surgery in Diabetes.)

3. Avoidance of Complications.

(a) There are no direct clinical laboratory tests for the recognition of impending gangrene; but experience has shown that if the blood sugar is kept down at a level near normal, with an adequate carbohydrate intake, the patient is safe.

(b) Acidosis and Coma Coma is the direct result of acidosis; and acidosis can be accurately checked in the laboratory, by:

1. Qualitative and approximately quantitative estimates of acetone, and diacetic acid.
2. The total titratable acidity of the urine.
3. Urinary ammonia.
4. The hydrogen-ion concentration of the blood.

REPORT OF INSURANCE COMMITTEE
1929-30

To the Officers, Council and House of Delegates of the Nebraska State Medical Association:

Your insurance committee has been in existence for the past three years as well as has the present Group policy of Malpractice insurance been in force for the members of the Association. The adjustment period must now be well in the past and we are now able to come to some fair conclusions as to what, if any, benefits have come to us as members of the Nebraska State Medical Association and to the individual Medical Practitioner of Nebraska as a direct result of procuring for the members of this Association malpractice coverage through the Group Insurance plan.

We beg, therefore, to submit the following facts:

1. Coverage since the group insurance plan has been instituted doubled in amount, i. e., from 5000/15000 to 10000/30000.

2. The cost per annum has been reduced more than half for an equal amount of coverage. This also applies to all other competitive lines of this class of insurance sold in Nebraska.

3. The scope of all such policies has been broadened and the phraseology simplified and clarified, thus reducing to a minimum the difficulties which might arise out of the question of policy coverage for any given suit.

4. It has, since instituting Group Insurance, been made obligatory for the Insuring Company to carry forward, if necessary, to the last court for procuring a decision favorable to the Doctor who is being sued, as well has it made cancellation impossible by the Insuring Company in the midst of trouble, a condition which has twice occured in Nebraska prior to this Committee's selection of the present Group plan.

5. There has been established a deterrent for instituting lawsuits through the unity of Group insurance and its contingency upon membership in the State Medical Association which makes it more difficult for those of our profession who would forget responsibilities and either by inference or action cause a lawsuit to be launched against a colleague.

Your committee further begs to submit the following information regarding the activities of the United States Fidelity and Guaranty Company, insurors of our Group policy, who have for the past several years carried such of our malpractice suit burdens as are below quoted.

1. Certificates in force April 19, 1930	309	
2. Premium volume for 1928 was		$7,518.87
Premium volume for 1929 was		6,312.13
Or a net loss in premiums of		1,206.74
It is, therefore, reasonable to assume there has also been a loss in the number of members insured.		
3. Statistics relative to claims and suits:		
(a) Claims and suits pending in 1928, carried to 1929	7	
(b) Amount of settlements made in 1929 from suits pending in 1928, no losses—expenses incurred		1,889.81
(c) Suits won in 1929 from those pending in 1928	5	
(d) Additional claims and suits filed in 1929	15	
(e) Settlements made for four claims and suits filed in 1929.		
Amount of total loss and compromised settlements		7,200.00
Expenses incurred in above		950.16
Total Expense		$8,150.16
(f) Suits won in 1929 from those filed in the same year	2	
(g) Suits still pending in 1929 and carried over into 1930	9	
(h) Suits still pending from 1928	4	
(i) Suits still pending	13	

4. In spite of the repeated recommendations of the Group policy by the officers of the Association, a great number of members are indifferent to its existence. There is but one theory which your committee can advance for the above condition which may be called the human nature hazard, i. e., that which is easily acquired is little desired.

We must confess that after several years experience we are disappointed at the response from the membership body as a whole, and can find no excuse for it, as in every instance it appears that the service and protection given the members by the United States Fidelity and Guaranty Company and its attorneys has been adequate, prompt and satisfactory in every way.

We are, however, thoroughly convinced after exhaustive study of the situation that to revert to conditions existing prior to institution of the Group plan would be most disastrous in this time of ever increasing numbers of malpractice suits, and once more direct your attention to the importance of fortifying yourselves against such a disaster by procuring protection to which you are entitled, thereby building up such an impregnable defense against unjust and malicious legal assaults that right may finally prevail and the honest Doctor may practice his profession unhampered by the fears which assail us in this present day.

Respectfully submitted,
C. A. Selby, Chairman,
R. B. Adams, Secretary.

PROCEEDINGS, ANNUAL MEETING, NEBRASKA STATE MEDICAL ASSOCIATION, 1930

HOUSE OF DELEGATES: FIRST SESSION
Lincoln Hotel, May 13, 1930

The House of Delegates was called to order by Dr. Morris Nielsen. Motion was made that inasmuch as the minutes of the 1929 meeting had been published, that the reading of them be dispensed with, and that they be adopted as printed in the Journal. Seconded and carried.

Roll call by Secretary Adams showed 53 members present. Then followed the regular order of business.

The motion was made that Dr. D. D. Stonecypher be seated as a delegate for Otoe County. Seconded and carried.

The motion was made that Dr. John Buis be seated as a delegate for Cedar-Dakota-Dixon-Thurston Wayne County Society. Seconded and carried.

The motion was made that Dr. H. W. Benson be seated as a delegate for Burt County Society. Seconded and carried.

Nominations for president pro tem were called for.

A motion was made that Dr. Morris Nielsen be elected as president pro tem. Seconded and carried.

The report of the Council was called for. The motion was made that inasmuch as the report of the council had been published that the reading of the report be dispensed with and adopted as published in the Journal. Seconded and carried.

The report of the program committee was called for. Secretary Adams stated that inasmuch as both the program committee and the secretary's report had been published, he saw no necessity of reading them again. Motion made that the reports of the program committee and secretary be accepted as printed in the Journal. Seconded and carried.

The report of the Journal and Publication Committee was called for. Dr. Long had nothing further to report than that reported to the council in January.

The Campaign Committee report was called for. Dr. Hohlen had nothing further to report than had been made to the council.

The Insurance Committee report was called for. The report was read by Dr. Selby. The motion was made that this report be received and referred to the council. Seconded and carried.

The motion was also made that the House of Delegates request permission from the general sessions that Dr. Selby, as chairman of the Insurance Committee, appear before them and read his report. Seconded and carried.

The report of the Council on Medical Education was called for and read by Secretary Adams. The motion was made that this report be received and referred to the Council. Seconded and carried.

The report of Medical Legal Defense Committee was called for. The motion was made that the reading of this report be deferred until next session. Seconded and carried.

The report of the Committee on the Cost of Medical Care was called for. Dr. Rowe read his report. The motion was made that this report be accepted and referred to the Council and that the committee be continued for future service. Seconded and carried.

The report of the Delegates to the A. M. A. was called for. Dr. Fouts read the report. The motion was made that the report be accepted and referred to the council. Seconded and carried.

The report of the Delegate to the Council on Medical Education was called for. Secretary Adams reported that Dr. Welch will read his report Thursday morning at the general session.

Dr. Overgaard read the Necrology Report. The members remained standing during the reading. The motion was made that two pages be set aside in the Journal in Memoriam to these doctors. Seconded and carried.

Secretary Adams read the proposed amendment to the constitution which was: To amend Section 3 of Article VIII of the Constitution of the Nebraska State Medical Association to read as follows:

"Except that the Councilors shall be elected by a majority vote of the delegates present from that Councilor District at the meeting of the House of Delegates on the morning of the last day of the general session."

After general discussion the motion was made that this proposed amendment be adopted. Motion lost.

Dr. F. A. Long proposed an amendment to the bylaws relative to a loan fund for deserving medical students as follows:

Amend Chapter VIII—Committees.

Under Section 1. Immediately following the phrase "A Public Activities Committee" add A Committee on Student Loan Fund.

Add to Chapter VIII—Section IX as follows:

Section IX. The Committee on Medical Student Loan Fund shall consist of three physicians in active practice, residing conveniently to the city where the Fund is to be administered, to be elected by the House of Delegates for terms of three years; except, that in the beginning one shall be elected for one year, one for two years and one for three years. There shall be appropriated annually from the General Fund of this Association, if current finances justify such appropriation, the sum of five hundred dollars to be known as a Medical Student Loan Fund, which sum may be used by the committee to assist worthy, needy medical students of above average scholarship, residents of Nebraska, and unmarried, members of the Junior or Senior classes of the University of Nebraska College of Medicine or of the Creighton University College of Medicine, or Internes from these colleges; the money so used to be allocated equally as nearly as may be possible to students of the Nebraska University College of Medicine and the Creighton University College of Medicine. This money is to be loaned to the students at the option of the committee, without interest for two years; but shall draw interest at the rate of six per cent from and after the end of two years until the principal and interest are paid. When such money is paid back to the Fund it shall become a part thereof to be again used for assisting needy students as in the first instance. The Committee shall make a report of its activities at the end of each fiscal year.

This amendment was referred to the council.

Nominations for the members of the nominating committee were called for, each councilor to name a member from each councilor district.

The nominations were made as follows:

1st District—Dr. J. W. Duncan, Omaha.
2nd District—Dr. J. E. M. Thomson, Lincoln.
3rd District—Dr. G. J. Rubleman, Tecumseh.
4th District—Dr. R. A. Frary, Stanton.
5th District—Dr. W. W. Wright, Kennard.
6th District—Dr. D. D. King, York.
7th District—Dr. Joe Bixby, Geneva.
8th District—
9th District—Dr. W. D. McGrath, Grand Island, Nebr.
10th District—Dr. J. M. Campbell, Stamford.
11th District—Dr. J. C. Newman, Wallace.
12th District—Dr. A. L. Miller, Kimball.
Adjourned.

COUNCILOR MEETING: FIRST SESSION

Lincoln Hotel, May 13, 1930

The meeting was called to order by President Selby. Those present were Drs. A. E. Cook, H. J. Lehnhoff, C. A. Selby, W. R. Boyer, F. Tornholm, L. W. Rork, Morris Nielsen, R. D. Bryson, A. L. Cooper, A. P. Overgaard, H. E. Potter, and R. B. Adams.

The Insurance Committee report was read. The motion was made that it be published immediately following original articles in the Journal as an original article. Seconded and carried.

The report of the Council on Medical Education was read. The motion was made that the report be placed on file. Motion seconded and carried.

The report of the Committtee on the Cost of Medical Care was made. Motion was made that the report be published. Motion seconded and carried.

The report of the Delegate to the A. M. A. was called for. The motion was made that the report be accepted and published. Motion seconded and carried.

Dr. Long's proposed amendment was considered. The motion was made that the amendment be adopted but strike out the words "and unmarried", "residing convenient to the city where the fund is to be", and "without interest", thus having the interest start immediately. Seconded and carried.

Dr. Edwin Davis appeared before the council and presented a matter relative to "fraud on the air".

After discussion a motion was made that a committee be appointed to draft the resolution of Dr. Davis so it can be presented tomorrow. Seconded and carried. Dr. Selby appointed Drs. Morris Nielsen, R. B. Adams, and Edwin Davis to function on this committee.

The motion was made that we recommend to the House of Delegates that they endorse Dr. A. C. Stokes' candidacy for University Regent from the second district. Seconded and carried.

Motion made that we adjourn. Seconded and carried.

HOUSE OF DELEGATES: SECOND SESSION

Lincoln Hotel, May 14, 1930

The meeting was called to order by Dr. Nielson. Roll call by secretary Adams showed 46 members present.

The motion was made that Dr. Rudolph Decker be seated as a delegate for Thayer County. Seconded and carried.

Dr. Duncan was appointed from the first district to serve on the nominating committee.

The minutes of the first session were read by secretary Adams, and accepted as read.

Dr. Bailey read the report of the committee on Public Policy and Legislation. The motion was made that this report as read by Dr. Bailey be passed by the general session. Seconded and carried.

The motion was made that a copy of the resolutions in Dr. Bailey's report be mailed to each senator and representative, to the president, and to the judicial council of the A. M. A. Seconded and carried.

The secretary read the following proposed amendment to the By-Laws: Change Chapter V, Section 2, Line 19 to read "not more than three members".

The motion was made that the amendment to the By-Laws be adopted. Seconded and carried.

Dr. Overgaard read the minutes of the first councilor meeting. The motion was made that the minutes be adopted. Seconded and carried.

The report of the committee to regulate fraud by air was read by Dr. Overgaard. The motion was made that the report be accepted. Seconded and carried.

The motion was made that the secretary of the Nebraska State Medical Association be instructed to communicate with Dr. Olin West, Secretary of the A. M. A., asking if it is the desire of the A. M. A. for us to send resolutions of the sort drawn up by the committee to the Federal Radio Commission, and also, if we should send someone to that body to represent us in these resolutions.

Dr. Adams read Dr. Hohlen's resignation from the campaign committee. Motion was made that Dr. Hohlen's resignation be accepted. Seconded and carried.

Drs. Bailey, Lehnhoff, and Potter spoke in commendation of Dr. Hohlen's services to the Campaign Committee.

Dr. Hohlen was called to the floor and gave a short talk.

Motion made to adjourn. Seconded and carried.

COUNCILOR MEETING: SECOND SESSION

Lincoln Hotel, May 14, 1930

The meeting was called to order by President Selby. Those present were Drs. C. A. Selby, A. P. Overgaard, F. Tornholm, R. D. Bryson, A. L. Cooper, H. J. Lehnhoff, K. S. J. Hohlen, W. D. McGrath, H. E. Potter, A. E. Cook, Morris Nielsen, R. B. Adams, L. W. Rork, and W. R. Boyer.

The Council recommended as follows:

The motion was made that Dr. McGrath be seated instead of Dr. Owen. Seconded and carried.

The following budget for 1931 was submitted:

Journal Fund	$ 1.50 per member
Defense Fund	2.00 per member
Salary Chairman Defense Committee	600.00
Salary of Secretary	600.00
Councilor Expense	360.00
Office Expense of Secretary	800.00
Reporter for Meeting	150.00
Campaign Committee	500.00
Public Activities Committee	1,500.00
President's Expense	100.00
Salary Chairman Public Activities Committee	1,000.00
Legislative Committee	100.00
Program Talent	500.00
Delegates to the A. M. A. and Council of Medical Education	as submitted
Medical Student Loan Fund	500.00

The motion was made that we recommend these appropriations to the House of Delegates. Seconded and carried.

Nominations for a member of the Medical Legal Defense Committee were called for. Dr. Fouts was nominated to succeed himself for the next two years on this committee.

Motion was made that nominations be closed and that we cast a unanimous vote for Dr. Fouts as a member of the Medical Legal Defense Committee. Motion seconded and carried.

Nominations for Secretary were called for.

Motion was made that Dr. Adams be elected by unanimous vote as secretary for the next three years. Seconded and carried.

The motion was made that the next meeting of the council, which is in January, be held in Omaha. Seconded and carried.

A round table discussion with Dr. Hays was held covering Public Activities of the coming year.

Motion made that we adjourn. Seconded and carried.

HOUSE OF DELEGATES: THIRD SESSION

Lincoln Hotel, May 15, 1930

The meeting was called to order by Dr. Hohlen. Roll call by Secretary Adams showed 50 members present.

The minutes of the second session were read by Secretary Adams. The motion was made that the minutes be adopted as read. Seconded and carried.

The minutes of the second councillor meeting were read by Dr. Overgaard.

The motion was made that the minutes be adopted as read. Seconded and carried.

The report of the committee on nominations was read by Dr. Bixby.

To the Chairman and Members of the House of Delegates of the Nebraska State Medical Association:

Your Committee on Nominations, after having received suggestions from the general membership begs to submit the following nominations for your approval:

For President—Dr. Lucien Stark, Norfolk.

For Vice Presidents—Dr. J. M. Willis, McCook; Dr. F. B. Young, Gering.

For Councilors—1st District, Dr. J. M. Duncan, Omaha; 2nd District, Dr. H. J. Lehnhoff, Lincoln; 3rd District, Dr. W. R. Boyer, Pawnee City; 4th District, Dr. A. E. Cook, Randolph.

For Delegate to A. M. A.—Dr. R. W. Fouts, Omaha.

For Alternates—Long term, Dr. J. J. Hompes, Lincoln; short term, Dr. H. M. Hepperlin, Beatrice.

For Delegate to Council on Medical Education—Dr. J. S. Welch, Lincoln.

For Committee on Journal and Publication—Dr. F. A. Long, Madison.

For Public Activities Committee—Dr. F. W. Heagey, Omaha.

For Campaign Committee to fill 2 years of unexpired term of Dr. K. S. J. Hohlen—Dr. Oliver Everett, Lincoln.

For Medical Students Loan Committee—Dr. F. A. Long, Madison, 1 year; Dr. H. J. Lehnhoff, Lincoln, 2 years; Dr. A. P. Overgaard, Omaha, 3 years.

Motion was made that since there were no further nominations the Secretary be instructed to cast the unanimous ballot of the House for Dr. Lucien Stark for President-elect. Seconded and carried.

The Secretary cast the unanimous ballot of the House for Dr. Lucien Stark for President-elect. The election of two Vice Presidents was next in order.

The motion was made that the Secretary cast the unanimous ballot of the House for Dr. J. M. Willis, McCook, and Dr. F. B. Young, Gering, for Vice Presidents. Seconded and carried.

The Secretary cast the unanimous ballot of the House for Dr. J. M. Willis and Dr. F. B. Young for Vice Presidents.

The election of councilors was next in order. Dr. A. P. Overgaard was nominated from the floor. As a result of the ballot taken Dr. A. P. Overgaard was declared elected councilor for the first district.

Moved that Dr. Overgaard's election be made unanimous. Seconded and carried.

There being no further nominations it was moved and seconded that the secretary cast the unanimous vote of the House for Dr. H. J. Lehnhoff for Councilor, 2nd District; Dr. W. R. Boyer for Councilor, 3rd District; Dr. A. E. Cook for Councilor, 4th District. Seconded and carried.

The seretary cast the unanimous ballot for Drs. Lehnhoff, Boyer, and Cook for councilor for their respective districts.

Election of Delegate to the American Medical Association was next in order.

Dr. A. D. Dunn, Omaha, was nominated from the floor.

As a result of the ballot taken:

Dr. A. D. Dunn received 16 votes.

Dr. R. W. Fouts received 30 votes.

Dr. Fouts was thereby declared elected.

Election of alternate delegates to the A. M. A. was next in order. A motion was made that the Secretary be instructed to cast the unanimous ballot of the house for Dr. J. J. Hompes for the long term and Dr. H. M. Hepperlin for the short term—alternates to the A. M. A. Seconded and carried.

The Secretary cast the unanimous ballot for Dr J. J. Hompes and Dr. H. M. Hepperlin for alternates to the A. M. A.

The election of a Delegate to the Council on Medical Education being next in order, a motion was made that the Secretary be instructed to cast the unanimous ballot for Dr. J. S. Welch. Seconded and carried.

The Secretary cast the unanimous ballot for Dr. J. S. Welch.

The next being the election of a member of the Public Activities Committee, a motion was made that the Secretary cast the unanimous ballot of the House for Dr. F. W. Heagey for member of the Public Activities Committee. The Secretary cast the unanimous ballot of the House for Dr. F. W. Heagey for member of the Public Activities Committee.

Dr. Oliver Everett of Lincoln being the only nominee for the unexpired term of Chairman of the Campaign Committee, it was moved and seconded that the Secretary cast the unanimous ballot of the House for Dr. Everett. Seconded and carried.

The Secretary cast the unanimous ballot of the House for Dr. O. W. Everett for Chairman of the Campaign Committee.

There being no further nomination, it was moved that the Secretary cast the unanimous ballot of the House for the Members of the Medical Students Loan Fund as follows:

Dr. F. A. Long, Madison, 1 year term.

Dr. H. J. Lehnhoff, Lincoln, 2 year term.

Dr. A. P. Overgaard, Omaha, 3 year term.

Seconded and carried.

The Secretary cast the unanimous ballot of the House for Dr. F. A. Long, Dr. H. J. Lehnhoff, and Dr. A. P. Overgaard as members of the Medical Student Loan Committee.

Dr. Nielsen was appointed to find Dr. Lucien Stark and request him to appear before the House of Delegates. Dr. Stark being presented, gave a short talk.

The Omaha Chamber of Commerce having invited the Association to meet in Omaha in 1931, it was moved that this invitation be accepted. Seconded and carried.

It was moved that a vote of appreciation be given the Lancaster County Medical Society for its courtesy and entertainment during the meeting. Seconded and carried.

Adjourned.

ROLL CALL—HOUSE OF DELEGATES

Adams—Geo. L. Pinney	p	a	p
E. B. Hamel			
Boone			
Box Butte			
Buffalo—G. H. Bentz	a	p	p
Burt—H. W. Benson	a	a	p
M. Wood			
Butler—J. H. Downing	a	a	a
C. E. Bede			
Cedar-Dakota-Dixon-Thurston-Wayne—John Buis	p	a	p
P. F. Siman			
Chase-Dundy-Hayes-Hitchcock			
Cheyenne-Kimball—A. L. Miller	p	p	p
Dr. Everett			
Clay—C. W. Keith	p	p	a
Colfax—L. H. Sixta	a	a	a
F. G. Kolouch			
Cuming—H. W. Francis	p	a	p
Custer—F. A. Burnham	a	a	p
Dawson			
Dodge—W. H. Heine	a	a	a
A. O. Fasser			
Fillmore			
Franklin—Amy R. Chapman	p	p	p
Hal C. Smith			
Furnas			
Gage—F. W. Buckley	p	p	a
J. C. Tucker			
Hall—W. D. McGrath	p	p	p
Hamilton—J. M. Woodard	a	a	a
Harlan—J. N. Campbell	p	p	p
W. C. Bartlett			
Holt and Northwest—F. L. Wilson	a	a	a
J. P. Brown			
Howard—R. T. Jones	a	a	a
M. O. Arnold			
Jefferson—D. O. Hughes	a	a	a
G. A. Heath			
Johnson—G. J. Rubleman	p	p	p
A. P. Fitzsimmons			
Keith-Perkins			
Lancaster—J. E. M. Thomson	p	p	p
B. F. Williams			
Geo. W. Covey	p	p	p
J. J. Hompes			
H. E. Flansburg	p	p	p
A. D. Munger			
Knox—A. J. Schwedhelm	a	a	a
Carl Green			
Lincoln—J. C. Newman	p	p	p
Madison-Stanton-Antelope-Pierce—A. M. Sonneland	a	a	a
Lucien Stark			
E. E. McClelland	a	a	a
W. W. Graham			
R. A. Frary	p	p	p
John D. Reid			
Walter Benthack	p	a	a
Frank Salter			
Merrick			
Nance—Homer Davis	p	p	p
Nemaha—I. W. Irvin	a	a	a
B. F. Lorance			
Omaha-Douglas—F. J. Wearne			
J. W. Duncan	p	p	a
R. W. Fouts	p	p	p
Chas. M. Swab			
C. C. Tomlinson	p	p	p
W. L. Sucha			
Charles Moon	p	p	p
James W. Martin			
Louis Bushman	p	p	a
L. E. Hanisch			
W. B. Moody	p	p	p
J. H. Murphy			
Glenn Miller	p	a	p
L. A. DeLanney			
Otoe—D. D. Stonecypher	p	a	a
Pawnee—E. L. McCrea	a	a	a
J. F. Prendergast			
Phelps—W. A. Shreck	p	p	p
J. L. Magill			
Platte—D. E. Koebbe	p	a	p
Polk—J. C. Malster	p	a	p
C. L. LeMar			
Red Willow—W. D. McKechnie	p	p	p
Richardson—G. W. Egermayer	p	p	p
Wm. Shepherd			
Saline—A. A. Conrad	p	a	p
F. J. Stejskal			
Saunders			
Scottsbluff—A. L. Cooper	p	a	p
Seward—J. E. Meisenbach	p	a	a
Joe Morrow			
Thayer—Rudolph Decker	a	p	p
W. I. McFarland			
Valley			
Washington—W. E. Wright	p	p	p
Webster—R. S. Martin	a	a	a
E. A. Creighton			
York—D. D. King	p	p	p
Cass			

COUNCILORS

A. P. Overgaard	p	p	p
H. J. Lehnhoff	p	p	p
W. R. Boyer	p	a	p
A. E. Cook	p	p	a
Morris Nielsen	p	p	p
F. Tornholm	p	p	p
H. E. Potter	p	p	a
W. J. Douglas	a	a	a

R. D. Bryson	p	a	p
L. W. Rork	p	p	p
C. A. Selby	p	p	p
A. L. Cooper	p	p	p

OFFICERS

President—K. S. J. Hohlen	a	p	p
Vice Presidents—A. L. Cooper	p	a	a
Jos. Bixby	p	p	p
Secretary-Treasurer—R. B. Adams	p	p	p

EX-PRESIDENTS

M. L. Hildreth	a	a	a
J. E. Summers	a	a	a
W. O. Bridges	a	a	a
A. R. Mitchell	a	a	a
F. A. Long	p	p	p
L. M. Shaw	p	a	a
P. H. Salter	a	a	a
J. P. Lord	p	p	p
I. N. Pickett	p	a	a
J. P. Gilligan	a	a	a
E. W. Rowe	p	a	a
W. F. Milroy	a	a	a
C. L. Mullens	a	a	a
H. W. Orr	a	a	a
M. S. Moore	a	a	a
B. B. Davis	a	a	p
B. F. Bailey	p	p	p
Morris Nielsen	p	p	p
Palmer Findley	a	a	a
H. J. Lehnhoff	p	p	p
H. E. Potter	p	p	a
B. R. McGrath	p	a	p
F. S. Owen	a	a	a

REPORT OF AMERICAN MEDICAL ASSOCIATION MEETING, 1929

The Eightieth Annual Session of the American Medical Association met at Portland, Oregon, July 8 to 12, 1929. The attendance of about 3,000 was made up principally of physicians from the western coast states, California, Oregon and Washington. Five sessions of the House of Delegates were consumed with the usual addresses, reports of officers and committees, and routine business. A detailed report was published in the issue of the Journal of the American Medical Association immediately following the meeting. Only the more important matters of some local interest will be briefly detailed in this report.

The Board of Trustees reported a substantial increase in the Journal circulation for the past year. Also that Hygeia, the lay health magazine published by the Association, is now self-sustaining, 73% of its more than 70,000 subscribers are laymen and only 27% are physicians. Almost as many school teachers as physicians are subscribers. This fact should not pass unchallenged by the medical profession. Hygeia should be in the waiting room of every physician. Particularly is this true for Nebraska, since one of her medical men has recently become an assistant Editor of the Association's publications, particularly Hygeia.

The Trustees called attention to the fact that the Association had outgrown its Headquarter's Building, and provision should be made for larger quarters, and recommended that this be secured in the way of a new building, of such design as to properly reflect the ideals of the profession and stand as a monument to the achievement of scientific medicine in the United States. Looking toward the creation of a fund to assist in this needed expansion, they recommend an increase in the subscription price of the Journal. This was concurred in by the House of Delegates and the fellowship dues, and subscription rate was changed to not exceed $8.00 per year instead of $6.00. The Board of Trustees fixed the rate at $7.00 per year for the present.

Dr. Olin West, in his Secretary's report, stressed the need for compact and efficient organization, and deplored the inordinate number of medical meetings, occasioned by the existence of so many societies, the frequent hospital staff meetings of scientific nature, all of which sap the vitality of the county medical societies and consequently weaken the cause of organized medicine. Considerable discussion along this line was indulged in by a number of Delegates, all to the effect that hospital staff meetings should be limited to staff business and necrology reports.

The question of establishing a home for indigent physicians, which has occupied the attention of the past two or three sessions, was declared not feasible at this time.

A resolution on charges for listing names in classified telephone directories, was adopted as follows: "Resolved: That as long as the publishers of the classified telephone directory will list names of all ethical physicians free of charge, such use of their names be permitted; but should a charge be made for such listings, the House of Delegates will recommend to the various local societies composing the American Medical Association, that the listing of their members names in the classified telephone directory be discontinued".

The practice of hospital advertising in the daily press, by giving reports of special or unusual cases to the papers for sensational write up, was condemned, and a resolution requesting "that any physician observing such advertisements be requested to send them to the Council on Medical Education and Hospitals for its information and use in the rating of Hospitals".

A resolution was passed approving the suggestion that medical schools be encouraged to arrange for periods of practical experience for students with practitioners of high standing, preferably in rural communities, that they could better learn about the treatment of disease and contacts with people in their homes. The Council on Medical Education was instructed to investigate and consider this plan, and if found feasible and beneficial to encourage medical schools to inaugurate suitable methods for providing these vacation periods of practical experience for their students.

Dr. Wm. Gerry Morgan of Washington, D. C., was chosen President Elect, and Detroit the place for the 1930 meeting.

Respectfully submitted,
R. W. Fouts.

REPORT OF COMMITTEE ON COST OF MEDICAL CARE

May 2, 1930.

To the House of Delegates of the
Nebraska State Medical Association:

We desire to make the following report for the Committee on the Cost of Medical Care:

On February 13, 1928, the Committee on Cost of Medical Care adopted a comprehensive plan for the study of this problem, which was to extend over a period of five years. This committee, while self-appointed in the beginning, was made up of leading physicians who were thoroughly posted on medical economics. They called to their assistance prominent men in other fields more or less related with the medical profession. Medical statesmen have full control of the study, but, of course, there are students of medical economics who have the time and the preparation for the research work which is being done under the direction of the committee.

At first a good deal of doubt and skepticism arose in the ranks of the medical profession. But it was soon apparent that the movement was not only highly desirable but that it was in the hands of the medical profession and that the problem was to be investigated in its broadest scope without any desire to bring unfair criticism on the work of the medical profession.

We cannot know too much about our own profession and its contacts with the social body of the nation. There are now about one hundred fifty-seven thousand physicians in the United States. There are over one million people employed in preventive medicine and in remedial care of the sick. The studies which have been already laid out number seventeen. In addition, several miscellaneous problems have come up; as, for example, The Cost of Medical Care—a study made by Dr. Lee K. Frankel, Second Vice President of The Metropolitan Life Insurance Company.

The studies which have already been completed and reported in full and in abstract form are as follows:

(1) The Diseases and Conditions Responsible for Human Disability and Inefficiency.

(2) The Extent of Illness and of Physical and Mental Defects Prevailing in the United States. By Aldon B. Mills.

(3) A Survey of Statistical Data on Medical Facilities in the United States. By Allon Peebles.

(4) Hospital Service for Patients of Moderate Means. By Miles Carpenter. Abstracts of these important articles are now on file with your committee.

The American Medical Association, The United States Public Health Service and other agencies have agreed to cooperate with the committee in the development of the program of studies. The support of the committee by the Carnegie Foundation, the Milbank Memorial Fund, the Rockefeller Foundation, the Julius Rosenwald Fund, the Russell Sage Foundation and the Twentieth Century Fund have made possible the inauguration and the development of the program.

We recommend a continuation of your committee until the completion of the study by the national committee, when a full report should be made to the Nebraska State Medical Association. Dr. Harry H. Moore, medical economist, is director of the national committee on The Cost of Medical Care. He has seemed to appreciate the action of your society in appointing this committee to receive their reports and to pass them on to your society. Without funds of our own to carry on work, this committee can do but little more than to act in the capacity of unofficial observers.

—E. W. Rowe, Chairman.

AMERICA FOR ME

By Henry Van Dyke

'Tis fine to see the Old World, and travel up and down
Among the famous palaces and cities of renown,
To admire the crumbly castles and the statues of the kings,
But now I think I've had enough of antiquated things.

So it's home again, and home again, America for me!
My heart is turning home again, and there I love to be,
In the land of youth and freedom beyond the ocean bars,
Where the air is full of sunlight and the flag is full of stars.

Oh, London is a man's town, there's power in the air;
And Paris is a woman's town, with flowers in her hair;
And it's sweet to dream in Venice, and it's great to study Rome;
But when it comes to living there is no place like home.

I like the German fir-woods, in green battalions drilled;
I like the gardens of Versailles with flashing fountains filled;
But, oh, to take your hand, my dear, and ramble for a day
In the friendly western woodland where Nature has her way!

I know that Europe's wonderful, yet something seems to lack;
The Past is too much with her, and the people looking back.
But the glory of the Present is to make the Future free,
We love our land for what she is and what she is to be.

Oh, it's home again, and home again, America for me!
I want a ship that's westward bound to plow the rolling sea,
To the blessed Land of Room Enough beyond the ocean bars,
Where the air is full of sunlight and the flag is full of stars.

NASAL SINUS INFECTIONS IN CHILDREN

L. W. Dean, St. Louis (*Journal A. M. A.*, Sept. 14, 1929), discusses the etiologic relationship of chronic nasal sinusitis to disease elsewhere in the body and the causes of the sinusitis itself, such as: deficient diet; poor hygiene, including improper clothing and ventilation; allergy, metabolic disturbances; climatic conditions, especially lack of sunlight and dampness; swimming; endocrine disturbances; nephrosis; diseased tonsils and adenoids; nasal blockage, and infection, especially in contagious diseases. Treatment of chronic nasal sinus disease, he says, is both pediatric and laryngologic. Neither sort alone will give a good result. As a preventive measure the pediatric treatment is most important. After the pathologic changes become marked and drainage is interfered with, the laryngologic treatment assumes the major role. The first step in the treatment is the eradication of the cause. The second step is the examination by the pediatrician. The ordinary treatment for acute sinusitis is indicated during the acute exacerbations. One per cent ephedrine is especially beneficial at this time. Occasionally in the chronic condition it is necessary to make a meatal opening in the maxillary sinus which will remain open and furnish good drainage and ventilation for a few months. Operations on the nasal sinuses of children other than meatal drainage of the maxillary sinuses are rarely indicated.

LIBRARY OF THE
COLLEGE OF PHYSICIANS
OF PHILADELPHIA

In Memoriam

Thy leaf has perish'd in the green,
And, while we breathe beneath the sun,
The world which credits what is done
Is cold to all that might have been.

So here shall silence guard thy fame;
But somewhere out of human view,
Whate'er thy hands are set to do
Is wrought with tumult of acclaim.

* * *

Henry Monroe McClanahan - Died - Nov. 20, 1929

President, Nebraska State Medical Association, 1901

Harold Gifford - Died - November 28, 1929

President, Nebraska State Medical Association, 1908

In Memoriam

Alfred Lewis	Died	May, 1929
J. H. Tyndale	Died	June 7, 1929
W. A. Avery	Died	June 24, 1929
Wm. H. Pruner	Died	July 3, 1929
Willis J. Raynor	Died	July 14, 1929
Charles H. Maxwell	Died	July 19, 1929
John Mills Mayhew	Died	August 5, 1929
Noah Hayes	Died	August 6, 1929
E. C. Dolan	Died	
Sylvester A. Preston	Died	August 13, 1929
Robert A. Billings	Died	
Leonard Muir	Died	August 15, 1929
Eleanor Capitola Reed	Died	September 5, 1929
Roscoe P. Pierce	Died	October 18, 1929
Wm. H. Britt	Died	November 1, 1929
Chas. P. Brenn	Died	November 8, 1929
Marion B. Patty	Died	December 27, 1929
John G. Smith	Died	December 6, 1929
S. Harper Cowan	Died	January 30, 1930
Wm. L. Dayton	Died	February 28, 1930
B. H. Clark	Died	March 8, 1930
Frank S. Salter	Died	March 30, 1930
Daniel G. Walker	Died	March 9, 1930
Berthold C. Tiesing	Died	March 18, 1930
W. S. Rickard	Died	April 1, 1930
G. F. Bartholomew	Died	April 28, 1930

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DR. E. R. HAYS AND THE NOGUCHI MEDAL

Hero worship is not a part of medical journalism; but direct comment on the outstanding work of fellows is entirely within the purvue of the medical journalist.

For many years we have annually talked about educating the public in matters of public health and in regard to scientific medicine; but we never got beyond the talking stage until Dr. E. R. Hays of Falls City, as chairman of the committee on public activities of the Nebraska State Medical Association brought forth a program of public activities and put it into practice, in this state. The program so far developed includes lectures on health education at the several State Normal schools, at the Teacher's college of the University, health activities at the State Fair—emergency hospital, health examinations of men, women and babies, health exhibits, lectures and demonstrations — and Health Week, coincident with the annual meeting of the Nebraska State Medical Association, consisting of short health lectures to as many as 35 organized bodies of men and women.

Doctor Hays' work has attracted the attention of National bodies and it is understood that under the name of the "Nebraska Plan" the work is to be undertaken in other states, with the approval of the American Medical Association.

It was in recognition of the oustanding work in public health and health education that the Noguchi Medal was conferred upon Doctor Hays at the banquet of the Nebraska State Medical Association in Lincoln on the evening of May 14. In presenting the award, Dr. Victor E. Levine of the committee on award, and also representing the Phi Delta Epsilon fraternity, said in part:

"Doctor Hays, you typify in your worthy efforts the mission of the physician—one of service. The service of the physician is unique in that it is of the highest value only when rendered to an enlightened and understanding public.

"Modern medicine has enlarged its scope and broadened its vision. Travelling along new paths, we must strive to educate the public in general about matters of health, hygiene and preventive and curative medicine, that it may fully appreciate the value of honest scientific medicine, that it may not permit itself to be victimized by the unprepared and unscrupulous. We can maintain our prestige and continue in growth only by a diligent and united effort to take the public into our fullest confidence in matters pertaining to the cure and prevention of disease. We must not only be physicians to our patients but teachers to our community. With reference to the social and community aspect of medicine, we must become in a field rightfully our own, leaders, willing, courageous, enthusiastic, instead of followers, unwilling, disgruntled and apathetic.

"In behalf of the committee on award and in behalf of the Phi Delta Epsilon, I have the honor of presenting to you the Noguchi Medal, upon one side of which you will find carved into the gold the fundamental fact of life, 'Health is the First Wealth'."

Doctor Hays, in accepting the award, said:

"Should we be proud of our achievements in preventive medicine or ashamed that we have not done more?

"When we consider that vaccination was discovered 100 years ago and we yet have more small pox than any other civilized country on the globe; when we recall the value of typhoid immunization was proved in the Russo-Japanese war, and today we have hundreds of cases; when we think of our 15,000 annual death loss from diphtheria and our knowledge that toxin-antitoxin would have prevented it, we must admit we have accomplished little.

"The laboratory men with their scientific discoveries are far in the lead. We who have chosen to apply and distribute this knowledge must work with more concerted effort and definite plan if we wish to catch up with research. To know a rule and not apply it is scientific waste.

"Whatever my accomplishments in preventive medicine have been, all are due to the loyal support and cooperation of others. Organized medicine from the county unit to the American Medical Association has responded willingly to every call. The Auxiliary, the Tuberculosis Association, the Red Cross, the P. T. A., the Civic Clubs, the Fair Boards, the Universities, the Official Agencies, and our Honorable Governor, have all contributed valuable assistance.

"The Nebraska State Medical Association has just started on its educational campaign for disease prevention, and with sincerity of purpose and hard work it will lead this movement and win health for our people.

"I am not sure that the Committee has not made a mistake in awarding this medal to me. I sincerely thank you for it. Yet I am not so glad to get it as I am to know my efforts have been worthy of recognition."

A MEDICAL STUDENT LOAN FUND CREATED

Constructive legislation by the House of Delegates at the recent annual session created a medical student loan fund. Every member of the Nebraska State Medical Association will be interested in this new by-law and in the possibilities it promises for good in future years. While the fund starts with a paltry five hundred dollars it is to become a revolving fund and in ten years will be quite worth while. The text of the by-law follows:

> Section IX. The Committee on Medical Student Loan Fund shall consist of three physicians in active practice, to be elected by the House of Delegates for terms of three years; except, that in the beginning one shall be elected for one year, one for two years and one for three years. There shall be appropriated annually from the General Fund of this Association, if current finances justify such appropriation, the sum of five hundred dollars to be known as a Medical Student Loan Fund, which sum may be used by the committee to assist worthy, needy medical students of above average scholarship, residents of Nebraska, members of the Junior or Senior classes of the University of Nebraska College of Medicine or of the Creighton University College of Medicine, or Internes from these colleges; the money so used to be allocated equally as nearly as may be possible to students of the Nebraska University College of Medicine and the Creighton University College of Medicine. This money is to be loaned to the students at the option of the committee and shall draw interest at the rate of six per cent until the principal and interest are paid. When such money is paid back to the Fund it shall become a part thereof to be again used for assisting needy students as in the first instance. The Committee shall make a report of its activities at the end of each fiscal year.

The committee elected to administer this fund consists of Drs. F. A. Long, H. J. Lehnhoff and A. P. Overgaard.

FUNDAMENTAL PRINCIPLES PROPOSED BY THE CHAIRMAN OF THE COMMITTEE ON THE COST OF MEDICAL CARE

At a recent meeting in Washington of the Committee on the Cost of Medical Care, the following principles were promulgated by Dr. Ray Lyman Wilbur, Chairman. The Committee is now in its third year of the five year plan adopted at its inception, is well organized and is increasing in its potentiality for constructive work. Concerted agreement exists as to the non-expression of conclusions until the entire study will have been completed.

1. *The personal relation between physician and patient must be preserved in any effective system of medical service.*

Medical service is and doubtless, by its very nature, must remain a distinctly personal service. Even in this age of standardized commodities for the table, ready-to-wear clothing, and interchangeable spare parts for all types of machines, there has been no plan suggested for the reduction of medical diagnosis and treatment to basic units which can be ordered from travelling salesmen or acquired through correspondence courses. The physician must see his patient and see him in many cases, over an extended period of time if the diagnosis and treatment are to achieve the greatest possible accuracy and efficiency. There is no substitute for personal observation.

Man is not a standardized machine and each individual reacts to the conditions of life in a manner in some respects unique. In the treatment of disease, this individual variation is a factor of great significance and can receive due consideration only when the practitioner has known the patient for a considerable time and maintains a personal relation with the patient.

2. *The concept of medical service of the community should include a systematic and intensive use of preventive measures in private practice and effective support of preventive measures in public health work.*

The cost of adequate curative treatment is now high and may continue to increase as expensive procedures resulting from scientific progress becomes more widely used. Sickness, in addition, involves other personal and social costs, some of which cannot be measured in monetary terms.

The outstanding achievements in scientific medicine have been made in the preventive rather than the curative field. Knowledge now available for the control of malaria, tuberculosis, small pox, diphtheria, pellagra, typhoid fever, hookworm disease, and goiter, if effectively applied, would make unnecessary a considerable proportion of the present expense for the cure of sickness.

3. *The medical service of a community should include the necessary facilities for adequate diagnosis and treatment.*

From the standpoint of effective diagnosis, many diseases, such as tuberculosis, cannot be recognized promptly in their early stages without the aid of elaborate technical equipment. From the standpoint of adequate therapy, if the best of modern technique is not immediately available, complete cures are either delayed or rendered impossible of attainment. To cite a specific illustration of the improvement of modern therapeutic procedures over those of ten years ago, the time required for treatment of fractures of the hip, and the percentage of permanent invalidity resulting from that injury have each been reduced by more than half.

We cannot be content with anything except the best possible service that modern science can provide and it is, therefore, imperative that modern scientific equipment for the diagnosis and treatment of disease be available to the practitioners of medicine in every community.

THE POSTGRADUATE COURSE GIVEN BY THE UNIVERSITY COLLEGE OF MEDICINE

At 8 a. m., on the 5th of May, a group of men met in one of the wards of the new wing at the University College of Medicine Hospital, at Omaha, for the purpose of improving themselves in the art of medicine, for the benefit of mankind, as those who are conscientious are constantly striving to do. It was a varied group, some out of school only a few years while others have been out for thirty years or more. There was one man from Iowa and one from Kansas, several from Omaha and some from almost the west border of the state.

The week's schedule was full of interesting and helpful subjects given by men who have spent much time and work in a specialty. New things were explained and ideas that had lain dormant brought forth to light and brushed up. It would indeed be difficult to say which subject in the course was the most valuable, or which instructor was the best because it was all cream and not in the least sour. The case regarding sexual instruction to young women seemed to be the most hilariously received. A rabbit that was to die for us merely squealed and sat still, but that is usually the way laboratory animals act. The dog, however, showed very nicely the dilitation of the heart when the oxygen supply was cut off.

The new extension of the University has enabled the authorities to give more room to the various departments, thereby making possible better service to the patients and assisting the students. The library, under the capable supervision of Miss Hillis, has better accommodations for reading and looking up data. The stock room will soon require another tier of book space. The atmosphere was congenial and pleasant with everything done for our comfort. The dining room was open to us for noon luncheons. We were invited to attend the Douglas County Medical Society meeting which was appreciated, as was the entire course.

The following Doctors were present:

H. T. Allingham, Wesley Jones, A. J. Offerman, C. Di Stefano and W. R. Strickland, Omaha; J. M. Neely, E. Burkett Reed and Carl W. Sherfey, Lincoln; A. C. Antony, Clyde, Kansas; L. B. Brown, Stratton; Raymond Burr, Blair; W. K. Clark, Valentine; F. B. Cyphers, Duncan; W. I. Devers, Upland; B. R. Farner, Norfolk; G. M. Hansen, Madison; F. H. Hanson, Magnolia, Iowa; E. B. Hanna, York; Leo D. Harman, Pawnee City; Frank M. Heacock, Bancroft; Robert M. Lee, Ravenna; F. W. McCaw, Colon; Geo. H. Morris, Oshkosh; Geo. Harry Morris, Newman Grove; Wm. N. Nelson, Hardy; W. R. Neumarker, Columbus; S. A. Osheroff, Ericson; G. W. Pugsley, Bayard; H. H. Seely, Harvard; R. V. Witter, Bayard, and A. J. Edstrom, Stromsburg.

—George H. Hansen, Madison.

NEBRASKA ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

The seventeenth annual meeting of the Nebraska Academy of Ophthalmology and Otolaryngology was held in Lincoln the evening of May 12th.

About fifty men gathered at the Cornhusker Hotel for dinner. Following dinner the meeting was adjourned to the Lancaster County Medical Society assembly rooms in the Sharp building.

Clinical cases were presented by Dr. A. P. Furgason, Dr. J. J. Hompes, Dr. W. L. Curtis, Dr. S. E. Cook, Dr. F. F. Teal, Dr. D. D. Sanderson, Dr. J. S. Tucker.

Dr. Ralph Fenton of Portland, Oregon, the guest of the evening, addressed the society on the subject, "Intranasal Ethmoidal Surgery". Dr. Fenton believes, provided one recognizes the limitations and thoroughly understands the anatomy, that the intranasal route offers the best method of approach in selected cases. He emphasized the need of careful and exhaustive study of each individual case before instituting operative treatment of any kind. It is possible to carry out the intranasal operation by several stages and in that way limiting the degree of surgery to certain definite areas and leaving the other parts relatively undisturbed.

The following officers were elected to serve during the ensuing year:

President, Dr. A. E. Gadbois, Norfolk; Vice President, Dr. D. D. Sanderson, Lincoln; Sec'y-Treas., Dr. Clarence Rubendall, Omaha.

OUR MEDICAL CANDIDATE FOR REGENT

Stokes, Arthur Charles: Born, Bury, province of Quebec, 1869; graduate elementary schools of Canada; graduate Ames, Iowa, B. S. degree, 1892; University of Nebraska, 1899; post-graduate, Berlin, Germany, 1902-1904. Practicing medicine 1899 to date. Member of four Greek Letter societies. Married Bertha Shackleford, 1910. Taught surgery in University of Nebraska from 1904-1924. Was closely indentified with bringing the Medical School to Omaha in 1911. Organized the University of Nebraska Base Hospital No. 49 in Omaha in fall of 1917, which was taken to Allerey, France, in 1918, and remained there in service until April 1919. For the last ten years, Chairman of Omaha Chapter of American Red Cross. Member of Omaha Club and Omaha Country Club; member of Western Surgical Association, American College of Surgeons, American Urological Society, American Medical Association; office, 1805 Douglas Street; residence, Fairacres, Omaha, Nebraska.

RELATIVE CALORIC VALUES OF PLANTS GROWN IN THE SUN AND SHADE

Sunflower plants that have a warm place in the sun have nearly four times as many calories per plant as plants grown in the shade with other conditions exactly the same. This is one of the interesting facts about energy content of plants discovered by Dr. Frances L. Long, of the Coastal Laboratory of the Carnegie Institution of Washington at Carmel, California, in investigations that utilized the oxygen bomb calorimeter, an apparatus most frequently used to determine the energy value of fuel. Dr. Long used the heat of combustion as determined in the calorimeter rather than chemical analysis and subsequent calculations of caloric values. The energy in seeds was also determined. Castor bean seeds contain 2,975 calories, or 20 times as much as oat seeds. The calories in seeds represent all of the sum energy stored during the previous year and not used by the plant in its growth. They are the energy passed on as food for the sustenance of the new seedling of the next year. —Science, May 16, 1930.

FIFTY YEARS OF MEDICAL SERVICE: DR. DAN R. ROGERS, RAGAN, NEBR.

It means something to have practiced medicine fifty years. It means a wonderful constitution, continued good health, a continuity of purpose and a deeply rooted love for the profession and the people among whom one lives and labors—and perhaps other things.

DR. DAN R. ROGERS

Dr. Dan R. Rogers of Ragan, Nebr., was honor guest at a banquet of the Harlan County Medical society, at Alma, May 1st, the occasion celebrating his completion of fifty years of medical practice; forty-six years in Harlan county. Talks were made by Dr. K. S. J. Hohlen, Lincoln, president, Nebraska State Medical Association; Dr. A. L. Marsteller, Wilcox; Dr. C. S. Kennedy, Omaha, and a response was given by

Doctor Rogers. Telegrams of congratulation and regret were received from Dr. J. E. Summers and Dr. J. M. Patton, Omaha.

Dr. Dan R. Rogers was born in Fayette county, Pa., January 8, 1855, moved with his parents to Morgantown, W. V., in childhood, graduated from the West Virginia University, in 1877, and from Jefferson Medical College, Philadelphia, in 1880. He began practice in New Martinville, W. V., at once and continued there until 1884 when he came to Harlan county, Nebr., where he has continued in practice since that time.

He has been an active member of the State Medical Association for many years. We have it on the authority of Dr. J. E. Summers who has been a friend and surgical advisor for Doctor Rogers for upward of thirty years, that the doctor is the most systematic man in the medical profession in general practice, in Nebraska. He has always kept case records of all his patients. Doctor Ragan says, Doctor Summers had more influence in shaping his medical career both by example and precept than any other one person.

Doctor and Mrs. Rogers who were married in 1886 have 3 sons and 2 daughters.

Dear Reader:

The Journal and the Cooperative Medical Advertising Bureau of Chicago maintain a Service Department to answer inquiries from you about pharmaceuticals, surgical instruments and other manufactured products, such as soaps, clothing, automobiles, etc., which you may need in your home, office, sanitarium or hospital.

We invite and urge you to use this Service.

It is absolutely free to you.

The Cooperative Bureau is equipped with catalogs and price lists of manufacturers, and can supply you information by return mail.

Perhaps you want a certain kind of instrument which is not advertised in the Journal, and do not know where to secure it; or do not know where to obtain some automobile supplies you need. This Service Bureau will give you the information.

Whenever possible, the goods will be advertised in our pages; but if they are not, we urge you to ask the Journal about them, or write direct to the Cooperative Medical Advertising Bureau, 535 N. Dearborn St., Chicago, Illinois.

We want the Journal to serve you.

EDITORIAL PARAGRAPHS

Thirty-three Nebraska motorists killed in two weeks, reports the press—but what's the use of moralizing!

Summer clinics sponsored by the Chicago Medical Society will be held at the Cook County hospital from August 11 to 22 inclusive.

The minutes of the House of Delegates and Council at the annual meeting are published in this issue. They are worth anybody's time to read. Read them carefully and fully inform yourself as to what transpired.

Rival prophylactics in diphtheria are mentioned by the *J. A. M. A.*, for May 24, 1930. In the schools of Milwaukee from 1925 to 1928 the immunity achieved by the use of toxin-antitoxin were respectively 85, 62 and 75%. With diphtheria toxoid only 2 out of 128 gave a positive Schick test after treatment.

Because the official stenographer became ill at the end of the first day of the annual meeting and a substitute, unfamiliar with medical society reporting had to be substituted, the papers and discussions thereto, were later in reaching the editor's desk than usual and therefore publication of the annual meeting papers is slightly delayed.

Dr. Ralph Ferguson, Chicago, who was elected president of the Illinois State Medical Society in May, was originally a Nebraskan and his father still resides at Hastings. Nebraska, within recent years, has not only developed a profession second to none, but has contributed quite a number of men who have made their marks elsewhere.

Experiments made at the Potter Metabolic clinic by Long and Bischoff are said to show rather conclusively that neither uvursin, oxycatalyst, nor Sanitwongsei berries have any hypoglycemic properties, so that they can hardly be classed as substitutes for insulin. It is suggested possible that they might function by mechanisms dissimilar to insulin; but they are in no sense insulin-like.

A man named Charles McGonegal has just been appointed postmaster of Bell, Calif. The interesting thing about this item is that McGonegal lost both hands in the World war, but by mechanical devices he can perform all normal functions practically as well as anyone. He passed the civil service examination. He drives an automobile and drives an airplane. There is nothing one can think of that he can not do. The salary of the office in $2,700.

Dr. Charles Singer, professor of medical history at the University of London, was the guest speaker at the annual meeting of the Alpha Omega Alpha, honorary medical fraternity, at the University hospital, Omaha, May 27. He stated that the panel system had forestalled state medicine in England, and has provided medical service for the working classes who are obliged to pay a small sum into a fund administered by the government, for which the government in return provides complete medical attention. He thinks the panel system the solution to forestall state medicine.

During the annual meeting the writer overheard a physician sitting behind him ask his companion "What is zinc-gelatine dressing?" Having used this for many years the formula is herewith submitted: Dissolve 4 ounces of gelatine in 8 ounces of water over a water bath, add 2 ounces of oxide of zinc, stirring in well; then add 4 ounces of glycerin. It is well to have a double cooker for the purpose, so it may readily be reheated when needed. It makes a superlative dressing for eczematous and varicose ulcers. Apply over the limb as far as it is intended to run a bandage; apply bandage. Several applications of the zinc-gelatine and bandage should be made to make a fairly firm dressing. By varying the proportions of water and gelatine a heavier dressing may be made to suit one's purpose.

There is a noticeable trend toward supplying hospital facilities for people of moderate means. The most recent is the report that Mt. Sinai, New York City, will build a hospital for people of moderate means costing approximately $1,250,000 and furnishing accommodations for 120 patients. Instead of private rooms the beds will be in cubicles, furnishing ample privacy and avoiding the supposed publicity of ward accommodations. We are approaching a saner age in devising hospital facilities. The comparison of hospitals with hotels is not entirely unapt. Rich people patronize the deluxe hotels, people of moderate means go to hotels of less pretension; apply the same principle to hospitals—build hospitals with accommodations the middle class can pay for, instead of pauperizing them by forcing them into accommodations beyond their means.

JULY 1930
THIS MONTH IN MEDICAL HISTORY

Anthony Matan was born at Pistoia, Italy, July 27, 1730. He became Professor of Medicine at Pisa.

John Conolly (1794-1866) was Professor of Medicine in University College, London, in 1830 and is supposed to have been the first to introduce the principle of "non-restraint" in the care of the insane. He was later director of the Asylum at Hanwell (1839-1844).

July 6, 1660, Charles II began at London to "touch" for the cure of "Kings Evil". This was a custom that was followed in England from King Edward the Confessor (1050) to the reign of Queen Anne (1700).

1764, July 5. John Morgan of Philadelphia after fourteen years study of medicine (pupil of Dr. Redman six years, last four years pupil of Dr. Cullen and the Hunters) was admitted to a seat in the Royal Academy of Surgery (Paris). He brought the first glass eye to the United States and carried the first umbrella in Philadelphia.

1766 July 8, Dominique Jean Larry was born at Beaudeau. He was surgeon to the Grand Army of Napoleon and the Surgeon hero of the retreat from Moscow. In July, 1830, he was engaged in caring for the wounded in the uprising that overthrew Charles X.

Dr. Samuel D. Gross (1805-1884) graduated in Medicine in 1828 and in 1830 published his first work—a 389 page book on the "Anatomy, Physiology and Diseases of the Bones and Joints."

In 1730 there was "great mortality from small pox" in Philadelphia. Inoculation was practiced from 1731 until 1824. Thomas Jefferson was successfully inoculated in 1760. Vaccination was introduced into the country by Waterhouse in 1801.

1830. Dr. Daniel Drake of Cincinnati took the chair of Theory and Practice in Philadelphia but remained only one year and returned to Cincinnati in 1831 to found a Western School.

INSTALLATION OF PRESIDENT

B. R. McGRATH, M. D., Grand Island, in the chair: So great is considered the honor of being president of the Nebraska State Medical Association, that it was deemed necessary to have more formality in inducting him into office. In the absence of the President of the Nebraska Medical Association, I shall ask Dr. H. E. Potter, ex-President of this Association, to introduce to you the incoming President.

H. E. POTTER, M. D. (Fairbury): Mr. Chairman and Members of the Nebraska State Medical Association: Just a moment ago, I was advised that in the absence of Dr. Owen, our President, it was necessary for me to introduce our incoming President. I feel that as an extemporaneous speaker I have never been considered a "home-run hitter," but I am thankful for the privilege and grateful for the honor that has been extended to me in making this introduction.

Perhaps there is no man in the State—no member of our Association, at least—who has done more for organized medicine than the gentleman I have been delegated to introduce to you.

I remember well in 1927 when I happened to be in an official position in our State Association, the work he did at that time as chairman of the campaign committee. I believe he had a card index of every member of the legislature, both senators and representatives, and also of our Governor Adam McMullen, whom I believe is one of the best friends organized Medicine has ever had. He worked diligently and faithfully, and we passed what we felt was one of the biggest things in our State Association—the passage of the Basic Science law.

Of all men in the State, there is no one entitled to as much credit as the incoming President of our State Association for the passage of that bill. So while I feel he needs no introduction—you all know him—yet I am very pleased to introduce to you Dr. K. S. J. Hohlen, the incoming President of our State Association.

PRESIDENT-ELECT HOHLEN, (Lincoln): Mr. Chairman, Dr. Potter, Ladies and Gentlemen: I do not know what you would think of a fellow who would warn you a year in advance that if you got up to make an address, he would yell "Rotten!" But if I can make as good a speech as Dr. Potter did, I will do well. It was an address.

I was informed by the secretary I was to speak three minutes. First, I want to thank you for the honor you have bestowed upon me, and wish to state I will fulfill the duties of this office as well as I can and to the interests of everybody. I think we will get along all right.

There are a few things to which I wish to call your attention along legislative lines. The first is whether an attempt will be made to reconsider the Basic Science law. I think it will be made, but I do not think it will succeed. I was told by a man who led the fight that the chiropractors had been to see him, but there was "nothing doing", and I think we are pretty safe. The urologists are in arms over a man who uses the air to advertise. I went down to Hastings and ran onto this. The druggists are red hot on this subject. I walked into a drug store. The druggist is a brother of one of our former members. He started on this Kansas business. The first thing he said was, "Do you know one of the regents of our State University is secretary of this urologist's State organization?" The regent is a druggist in a little town.

What are the Hastings doctors doing They have a list of Hastings druggists, and say, "Which druggist do you want us to have fill this prescription?" They will pick out one. The two fellows belonging to that Association are not on that slip. That is a pretty good idea.

I think whoever is from the district where this regent lives had better tip him off, or when he comes up for re-election we can do to him what we did to Mr. Edgerton in the Fourth District.

I think you should take an interest in your coming elections. The first of the next year the legislature meets, and we should know whom we are sending down and how they stand toward the medical profession. Some important legislation is coming before the next legislature. It is good legislation and will need support to help put it across. There is a bill before Congress on Narcotics called the Porter Bill. If you have influence with your representatives at Washington, you should wire them.

I thank you very much.

AUXILIARY PRESIDENT'S ADDRESS*

MRS. A. P. OVERGAARD,
Omaha, Nebr.

For a period of four months I have had the honor of performing the duties of your state president. During that time the efforts of the officers have been exerted to advance the interests of the Auxiliary to the best of their ability. Although in retrospect we see evidence of numerous mistakes, we beg for them your charitable indulgence. I take pleasure in presenting for your consideration this report covering my term of office.

In January we received the first of the Study Envelopes issued by the Program Committee of the National Auxiliary. The material dealt with Common Defects in Children—What is Being Done to Correct Them. The National Program Chairman recommended that the envelope material be used by County Auxiliaries at monthly meetings. Copies of her letter were sent to County Presidents and the material forwarded. The February Envelope dealing with The County Health Unit and the March Envelope on Organization were sent out in the two succeeding months with the suggestion of the Program Committee that when possible County Auxiliaries use the study material to promote health programs and then pass the envelopes on to other organizations who desired them for outlining work for their health departments.

In accordance with suggestions of the Official Health Program of our National organization, correspondence was entered into with the Nebraska State Health Department to determine their plans for State Health Work. Dr. P. H. Bartholomew, Director of Public Health, informed us that there is no health program outlined and no work being performed as a part of any correlated scheme. Dr. Bartholomew stated that he felt that our Auxiliary might be of value if, after investigation as to its merits, we would endorse and work toward the establishment of County Health Units in Nebraska.

Our Official Health Program outlines a three-fold policy. (1) Education of our membership on the fundamental principles of public and personal hygiene which are evolving from scientific medicine. (2) Work for education of the public for the establishment of full-time health departments in rural communities, that is, the County Health Unit. (3) Work for the official health program of the state and local health departments under the direction of their officers.

Since Dr. Bartholomew's suggestion was in line with the policy of our National organization, we wrote to the State Bureau of Health for the literature on County Health Unit organization to supplement that of the February envelope on the same subject. Enough material was furnished for distribution to our County Presidents. This was forwarded for their consideration.

Letters addressed to the midwestern branch of the American Red Cross resulted in explicit information as to the scope of their work in Nebraska. Red Cross chapters are sponsoring nursing service in about twenty counties of the state. But in all cases the Red Cross County Unit is an emergency proposition conducted temporarily with the idea of interesting local agencies to continue the service. Material furnished by the Red Cross to those interested covers Public Health Nursing, County Unit Organization, and detailed information concerning the location and extent of their organization in the state.

A questionnaire sent out by the Public Relations Committee of the National Auxiliary was mimiographed and sent to County Presidents for distribution. Returns from the questionnaire indicate that about fifty per cent of our membership are members also of other organizations which do preventive or palliative health work.

In response to a request of the President of the Woman's Auxiliary to the A. M. A., letters were sent to County Presidents endorsing the Institute of Child Welfare to be conducted by the University of Missouri, June 26, 27 and 28.

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*Address given before the annual meeting of the Woman's Auxiliary, Nebraska State Medical Association, Lincoln, Nebr., May 13, 1930.

Considerable correspondence has been conducted in regard to Publicity in the State Medical Journal. It is the desire of the National Auxiliary to supply material where it is lacking locally so that interest will be maintained in the Auxiliary column of the magazine. Material has been furnished from national headquarters on Hygeia which was used for publicity and also as suggestive material for County Hygeia Chairmen. The program of the Detroit meeting was also supplied as was literature on Organization and statistics showing how our state compared with others in regard to cooperating with the State Health department. We are complying with a request of the National Publicity Chairman in furnishing a copy of all material printed in the State Journal during the year. It will be a part of the publicity exhibit at the Detroit meeting.

From the National Chairman of Finance we have received for distribution to County Treasurers an official receipt-book by means of which county, state, and National dues may be taken care of in an organized way. The books have been received enthusiastically by the counties.

A leaflet furnished by the National Public Relations Chairman entitled, "Why the Woman's Auxiliary?", was published in the Bulletin of the Douglas County Medical Society and by courtesy of that body reprinted for distribution to the wives of doctors. About fifteen hundred of these leaflets were mailed with the programs of the state convention.

The amended constitution was prepared by the Revisions Committee and three hundred copies printed and mailed to Auxiliary members. The work of the committee necessitated many meetings and much arduous labor. Letters were sent to several state presidents and sample constitutions obtained for use as models. The finished constitution is evidence of the careful work of the committee.

In April, the president received an invitation to visit the Lancaster County Auxiliary to present the educational plans of our national organization. The invitation was gladly accepted and the meeting thoroughly enjoyed. The hospitality of the Lancaster County Auxiliary was extended on several occasions for committee meetings with the State Board of Directors while arrangements were being made for the State Meeting. The uniform courtesy shown the State Officers by the local chairman and her committee members was greatly appreciated.

I have no recommendations to make. The measures investigated during my term of office manifestly require additional development and I would not hamper the incoming administration by any suggestions as to the activities of the organization. The National Auxiliary leaves the state and the county a free choice of work. The Official Health program outlines various plans dealing with public and personal hygiene, immunization for contagious diseases, and the education of our membership and of the public on health subjects. Before the State Auxiliary can decide definitely upon any one course of procedure, an advisory board from the Nebraska State Medical Association must pass upon the contemplated activity. When their cooperation and support have been obtained, any plan decided upon can be pursued with confidence.

In conclusion, I extend very sincere thanks to all of those who have assisted to make my efforts effective for the good of the organization. Especially am I grateful to the secretary for her loyal cooperation and unflagging zeal, to the treasurer for her efficient handling of the new receipt-books, and to others of the board whose work has been so coordinated with that of the president that all efforts would have been ineffectual without such support. It has been a great pleasure to be identified with the work of the Woman's Auxiliary to the Nebraska State Medical Association. I shall always remember the experience with the greatest appreciation.

THE JOHN PHILLIPS MEMORIAL PRIZE

The American College of Physicians announces the John Phillips Memorial Prize of $1,500.00, to be awarded for the most meritorious contribution in Internal Medicine and sciences contributing thereto, under the following conditions:

1. The contribution must be submitted in the form of a thesis or dissertation based upon published or unpublished original work.

2. It must be mailed to the Executive Secretary of the American College of Physicians on or before August 31, 1930.

3. The thesis or dissertation must be in the English language, in triplicate, in typewritten or printed form, and the work upon which it is based must have been done in whole or in part in the United States or Canada.

4. The recipient of the prize would be expected to read the essay at the next Annual Meeting of the College, after which he would he officially presented with the prize hy the President.

5. The College reserves the right to make no award of the prize if a sufficiently meritorious piece of work has not been received.

6. The announcement of the Prize winner will be made not later than two months before the Annual Meeting.

THE SOCIETIES

The May meeting of the **Madison Five Counties Medical Society** was held at Elgin on the 27th, forty physicians and ladies being present. Dr. Frank Conlin, Omaha, gave a lecture, illustrated by charts and slides, on "The Future of the Diabetic". The mortality of early age diabetes has been much lowered by insulin; hut the mortality after fifty has increased due to modern habits of life being relatively more indolent. Forty-six per cent of people after fifty develop coma which should be entirely preventable. 20,000,000 of the 120,000,000 people of the United States are diabetic.

Dr. C. R. Kennedy, Omaha, spoke on "The Diseased Gallbladder". He stressed the fact that jaundice is a rare symptom of gallbladder disease contrary to the older writers; it is a symptom of common duct obstruction. Right shoulder pain is not a symptom of gallbladder disease, but of pancreatic involvement. Pain developing after midnight, when the evening meal is disposed of, is likely gallbladder disease. The irregularity of the pain is a valuable symptom. The Graham-Cole test is certain of gallbladder disease—the emulsion preferred.

The Republican Valley and Tenth Counsilor District Medical Association held its spring meeting at Red Cloud on May 29th, 1930, as the guest of the Webster County Medical Society. The program consisted of a paper by Dean C. W. M. Poynter of the University of Nebraska College of Medicine on "Acute Peritonitis" and a talk by Dr. Clyde Moore of Omaha on "Vaccines and Serums in the Prevention and Treatment of Contagious Diseases". Ahout thirty members attended the meeting.

—M. B. Wilcox, Secretary.

A joint meeting of the **Richardson County, Nebr., Brown County and Nemaha County, Kansas Medi-**

cal Associations was held Monday evening at Hiawatha, Kansas.

At 6:00 o'clock a banquet for the doctors and their wives, was served at the Country Club. Fifty-six were present at the banquet.

During the medical meeting the Ladies Auxiliary of the Brown County association entertained the wives of the visiting doctors.

Members of the Richardson County Association present were: Drs. J. A. Waggener and Frank Nelson of Humboldt, W. E. Shook and G. W. Egermayer of Shubert, Wm. Shephard of Rulo and H. D. Burchard, M. L. Wilson, J. C. Gillispie, Peter L. Gillispie, H. R. Miner and C. L. Hustead, all from Falls City.

The program for the evening was presented by Dr. Shephard and Dr. Miner.—Falls City News.

The **Saline County Medical Society** met at Friend May 27, the guests of Drs. Frank E. Hamilton and Rodney K. Johnson, at a chicken dinner. Dr. D. C. Hilton, Lincoln, discussed the "Surgical Treatment of Peptic Ulcer"; Frank Breed D. V. S. showed a number of slides pertaining to "Rabies in Man and Animals".

HUMAN INTEREST TALES

Alvo, Nebr., wants a physician.

Dr. and Mrs. J. Calvin Davis, Omaha, have gone to Europe.

Dr. Theodore Stuckert has located at Weeping Water.

Dr. John R. Calvert has located at Pierce in succession to Dr. Walter Benthack.

A wing to St. Joseph hospital, Alliance, costing $200,000, has just been dedicated.

Dr. W. H. Taylor, Omaha obstetrician, submitted to a serious operation recently.

Dr. G. H. Morris, Oshkosh, did postgraduate work in Chicago during part of June.

Dr. J. A. Guttery, for some time in practice at Niobrara, has located at Lynch.

Dr. C. G. Moore, Fremont, has just recovered from severe infections of both hands.

Dr. W. Howard Heine, Fremont, suffered a fracture of the forearm cranking his auto.

Dr. Edgar Allen, native son of Cozad, has returned from a year's study in Europe.

Dr. C. R. Laird, Blue Hill physician, has accepted a position at the Hastings State hospital.

The marriage of Dr. F. L. Krampert, Imperial, and Miss Mae Shuemaker, Auburn,, is announced.

Dr. Walter Benthack, for a number of years in practice at Pierce, has located at Wayne and is opening a hospital there.

Dr. C. W. Gooden who some years ago was in practice at Edison, has returned and resumed practice there.

Bartlett, county seat of Wheeler county is said to be without a physician. The only physician in Wheeler county is located at Ericson.

Dr. E. C. Foote, Hastings, has purchased an airplane. This makes the fourth physician in Nebraska owning a plane.

Dr. H. C. Walker, Alliance, was recently called to Los Angeles, by the death of a brother, Dr. Thomas E. Walker of Cleveland, Ohio.

Dr. George Hoffmeister, Imperial, for some time interne at the University of California hospital, San Francisco, has returned to Imperial to practice.

Dr. and Mrs. John R. Nilsson, Omaha, attended the meeting of the American Railway Surgeons' association in New York City early in June.

Dr. A. D. Brown, Central City, spent some time doing hospital work in New York City, while his wife visited her parents in the same city.

Dr. and Mrs. L. E. Moon, Omaha, attended the American Proctological Association at Buffalo and the American Medical Association at Detroit last month.

Dr. and Mrs. F. S. Nicholson, St. Paul, returned from the pacific coast.

Dr. F. A. Lemar, Humphrey, has sold his interests at Humphrey, to Dr. D. J. O'Brien, formerly of Creston, who has recently become associated with Dr. H. R. Elston at Humphrey. Dr. Lemar has gone to New York for postgraduate study in eye, ear, nose and throat work and it is reported will become associated with Dr. A. E. Gadbois, Norfolk, in this specialty.

BOOKS RECEIVED

RECENT ADVANCES IN NEUROLOGY, by W. Russell Brain, M. R. C. P., (London), and E. B. Strauss, M. R. C. P., (London), small octavo, 430 pps., with 39 illustrations. P. Blackiston's Sons and Co., Phila. Price $3.50.

MINOR SURGERY by Arthur E. Hertzler, M. D., and Victor E. Chesky, M. D., 20 mo. 602 pages with 475 illustrations. Published by C. V. Mosby Company. Price $10.00.

INFANT NUTRITION by W. McKimm Marriott, B. S., M. D., 16 mo. 375 pages with illustrations. Published by The C. V. Mosby Company. Priced $5.50.

CERTIFIED MILK PROCEEDINGS OF A. A. M. M. C.—C. M. P. A. A. AND M. C. M. P., 1929, 350 pages.

NEBRASKA REGISTERED HOSPITALS*

	Beds	Average Patients	Bassinets	Births	Supt., M.D., R.N., Layman	Year Estab.
Ainsworth, 1508—Brown Co.						
Ainsworth Hospital	28	15	3	41	M.D.	1922
Albion, 1.508—Boone Co.						
Physicians Hospital	10	5	....	....	M.D.	1920
Alliance, 4,950—Box Butte Co.						
St. Joseph's Hospital	56	50	7	105	Lay	1910
Arnold, 933—Custer Co.						
Arnold Hospital	10	2	2	....	R.N.	1917
Atkinson, 1,300—Holt Co.						
Atkinson General Hospital	9	4	4	11	R.N.	1925
Auburn, 2,863—Nemaha Co.						
Auburn Hospital	10	6	2	7	Lay	1910
Aurora, 2,933—Hamilton Co.						
Aurora Hospital	16	6	4	38	R.N.	1916
Axtell, 394—Kearney Co.						
Bethphage Inner Mission Association	132	120	....	....	Lay	1913
Beatrice, 9,664—Gage Co.						
Beatrice Sanitarium	25	14	4	19	R.N.	1901
Lutheran Hospital	100	30	11	42	R.N.	1913
Nebraska Institution for Feeble-Minded	890	365	....	....	M.D.	1884
Beemer, 548—Cuming Co.						
Pierson Hospital	10	2	2	6	M.D.	1907
Blair, 2,702—Washington Co.						
Blair Hospital	15	4	2	16	R.N.	1906

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*From the Journal A. M. A., March 29, 1930.

	Beds	Average Patients	Bassinets	Births	Supt., M.D., R.N., Layman	Year Estab.
Broken Bow, 2,567—Custer Co.						
Broken Bow Hospital	35	10	4	13	M.D.	1923
Burkett, 20—Hall Co.						
Nebraska Soldiers and Sailors Home	114	85	....	....	M.D.	1888
Cambridge, 1,042—Furnas Co.						
Republican Valley Hospital	25	14	2	12	M.D.	1906
Central City, 2,410—Merrick Co.						
J. E. Benton Hospital	10	4	....	....	M.D.	1920
Chadron, 4,412—Dawes Co.						
Chadron Municipal Hosp.	28	new	6	new	Lay	1929
Columbus, 5,410—Platte Co.						
Columbus Hospital	30	20	13	....	R.N.	1921
St. Mary's Hospital	198	75	10	48	Lay	1879
Crawford, 1,646—Dawes Co.						
R. L. Ivins Hospital	10	4	....	....	M.D.	1918
David City, 2,216—Butler Co.						
David City Hospital	13	7	3	23	M.D.	1901
Fairbury, 5,454—Jefferson Co.						
Taylor Hospital	20	6	2	11	M.D.	1914
Falls City, 4,930—Richardson Co.						
Falls City Hospital	30	10	10	22	R.N.	1919
General Hospital	10	5	1	....	R.N.	1926
Farnam, 408—Dawson Co.						
Reeves' Memorial Hospital	12	3	....	....	M.D.	1925
Ft. Crook, 325—Sarpy Co.						
Station Hospital	40	20	....	....	M.D.	1896
Ft. Omaha (Omaha P. O.) —Douglas Co.						
Station Hospital	25	9	....	....	M.D.	1868
Ft. Robinson, 613—Dawes Co.						
Station Hospital	25	4	....	....	M.D.	1874
Fremont, 9,570—Dodge Co.						
Military Avenue Hospital	22	17	6	40	R.N.	1924
Richmond Hospital	12	7	3	28	R.N.	1923
Genoa, 1,069—Nance Co.						
Genoa Indian School Hosp.	30	5	....	....	Lay	1886
Grand Island, 15,900—Hall Co.						
St. Francis Hospital	135	90	15	181	Lay	1886
Hartington,,1,467—Cedar Co.						
St. John's Hospital	16	3	....	10	M.D.	1921
Hastings, 13,200—Adams Co.						
Mary Lanning Mem. Hosp.	73	50	15	140	R.N.	1915
Ingleside, 30—Adams Co.						
Hastings State Hospital	1504	1384	....	....	M.D.	1888
Kearney, 7,702—Buffalo Co.						
Good Samaritan Hospital	40	30	10	63	Lay	1924
Hosp. for the Tuberculous	126	109	....	....	M.D.	1912
State Industrial School for Boys	10	2	....	....	Lay	1880
Kimball, 1,620—Kimball Co.						
Kimball Hospital	14	9	5	36	R.N.	1919
Lincoln 71,100—Lancaster Co.						
Bryan Memorial Hosp.	50	37	10	86	R.N.	1926
Green Gables, Dr. Benj. F. Bailey Sanitarium	115	93	5	17	M.D.	1901
Isolation Hospital	22	4	....	....	Lay	1900
Lincoln General Hospital	132	94	22	321	R.N.	1924
Lincoln State Hospital	1180	1149	....	....	M.D.	1870
Nebraska Orthopedic Hosp	105	92	10	....	M.D.	1905
Nebraska State Penitentiary Hospital	15	2	....	....	M.D.	1914
St. Elizabeth's Hosp.	200	107	15	227	R.N.	1889
McCook, 4,303—Red Willow Co.						
St. Catherine of Sienna Hospital	65	22	8	65	Lay	1921
Milford, 792—Seward Co.						
Milford Hospital	7	....	....	....	Lay	1914
Nebraska Industrial Home	8	2	4	52	Lay	1890
Nebraska Soldiers and Sailors Hospital	50	40	....	....	Lay	1896
Minden, 1,527—Kearney Co.						
Seeley Hospital	24	5	8	12	M.D.	1928
Nebraska City, 6,279—Otoe Co.						
St. Mary's Hospital	35	14	10	85	R.N.	1927
Newman Grove, 1,200—Madison Co.						
Community Hospital	10	3	1	14	M.D.	1920
Norfolk, 8,634—Madison Co.						
Norfolk State Hospital	923	910	....	....	M.D.	1887
Verges Sanitarium	30	7	6	....	M.D.	1923
North Platte, 14,300—Lincoln Co.						
Redfield-Dent Hospital	20	10	2	15	Lay	1925
Wurtele Hospital	12	7	3	11	Lay	1922
Oakland, 1,356—Burt Co.						
Oakland Community Hosp.	12	7	2	22	Lay	1925
Omaha, 222,800—Douglas Co.						
Bishop Clarkson Memorial Hospital	87	55	8	110	R.N.	1883
City Emergency Hospital	40	7	....	....	R.N.	1912
Creighton Memorial, St. Joseph's Hospital	420	233	47	366	Lay	1880
Douglas County Hospital	185	165	4	12	Lay	1888
Evangelical Covenant Hospital	84	53	16	137	Lay	1905
Frederick Hospital	8	3	6	50	M.D.	1917
Immanuel Deaconess Institute	119	84	14	222	Lay	1890
Lord Lister Hospital	150	90	10	193	Lay	1914
Lutheran Hospital	45	17	6	....	R.N.	1928
Nebraska M. E. Hospital	200	155	25	465	R.N.	1891
Nebraska School for the Deaf	12	4	....	....	Lay	1869
Nicholas Senn Hospital	80	69	15	156	Lay	1912
Omaha Maternity Hospital	22	13	22	209	R.N.	1915
Radium Hospital	30	9	....	....	M.D.	1920
Riverview Detention Home	7	2	....	....	Lay	1905
St. Catherine's Hosp.	150	110	25	331	Lay	1910
Salvation Army Women's Home and Hospital	7	3	40	123	Lay	1896
South Side General Hosp.	25	10	5	30	R.N.	1894
University of Nebraska Hospital	167	142	14	323	M.D.	1917
Wise Memorial Hospital	75	48	12	60	R.N.	1901
Women's Detention Hosp.	21	10	....	....	M.D.	1918
Orchard, 444—Antelope Co.						
Orchard Hospital	7	2	3	1	R.N.	1918
Ord, 2,143—Valley Co.						
Ord Hospital	15	10	....	....	M.D.	1917
Oxford, 739—Furnas Co.						
Oxford General Hospital	14	new	5	new	M.D.	1929
Palmer, 577—Merrick Co.						
Coolidge Hosp. & Sanat.	10	2	2	27	M.D.	1916
Pawnee City, 1,595—Pawnee Co.						
Pawnee Hospital	30	23	4	50	M.D.	1916
Plainview, 1,199—Pierce Co.						
Plainview General Hosp.	8	1	2	18	R.N.	....
Plattsmouth, 4,190—Cass Co.						
Nebraska Masonic Home	40	39	....	....	Lay	1903
Schuyler, 2,636—Colfax Co.						
Kolouch Hospital	13	8	1	8	M.D.	1922
Seward, 2,368—Seward Co.						
Morrow Hospital	20	7	5	19	R.N.	1902
Seward Hospital	12	5	....	....	R.N.	1927
Sidney, 2,852—Cheyenne Co.						
Taylor Hospital	20	8	5	45	R.N.	1927
Spencer, 728—Boyd Co.						
Spencer Hospital	12	4	3	12	R.N.	1905
Stratton, 509—Hitchcock Co.						
Dr. Stewart's Private Hosp	14	7	....	....	M.D.	1902
Stromsburg, 1,361—Polk Co.						
Home Hospital	20	8	....	....	M.D.	1926
Stuart, 739—Holt Co.						
Wilson Hospital	15	6	2	....	R.N.	1920
Table Rock, 750—Pawnee Co.						
McCrea Private Hospital	10	1	1	5	M.D.	1906

	Beds	Average Patients	Bassinets	Births	Supt., M.D., R.N., Layman	Year Estab.
Tekamah, 1,811—Burt Co.						
Tekamah General Hospital	12	9	3	....	R.N.	1927
Tilden, 1,101—Madison Co.						
Tilden Hospital	10	3	2	12	Lay	1920
Walthill, 1,145—Thurston Co.						
Dr. Picotte Memorial Hospital	15	5	4	26	R.N.	....
West Point, 2,002—Cuming Co.						
St. Joseph Home for Aged	15	7	....	....	Lay	1905
Winnebago, 648—Thurston Co.						
Winnebago Indian Hos.	60	31	2	42	Lay	1916
York, 5,388—York Co.						
Lutheran Hospital	45	25	6	105	R.N.	1914
York Clinic and Hospital	12	6	5	16	R.N.	1920

Total registered hospitals in Nebraska, 104; capacity, 9,296 beds; 576 bassinets. Patients except newborn, 7,209; births, 5,012. Unregistered hospitals, 22; capacity, 580 beds, 76 bassinets.

FIRST AID SERVICE IN SMALL INDUSTRIAL PLANTS

To assist in the establishment of first aid service in industrial plants employing less than five hundred people, the Policyholders Service Bureau of the Metropolitan Life Insurance Company has just released a booklet entitled First Aid Service in Small Industrial Plants. This publication is one of a series issued by the Industrial Hygiene service of the Bureau dealing with the health of industrial and commercial workers.

The report, which is illustrated by photographs of first aid rooms maintained by several industrial concerns, discusses the importance of instituting sound measures to insure the prompt and efficient care of small or "minor" injuries. The construction and equipment of a first aid room, as well as the personnel necessary to staff it, are described in some detail.

As the labor laws in a number of the states and provinces have established minimum requirements for the provision of first aid equipment and facilities, and as the existing regulations are so varied that few generalizations regarding them can be made, an appendix has been incorporated into the report giving in outline form a summary of the laws of each state. This outline shows what industries are required by the laws of the various states to make provision for first aid treatment, as well as the standards which have been set up by the legislative bodies of these commonwealths.

In addition to First Aid Service in Small Industrial Plants, other publications in the Industrial Health series include Physical Examinations in Industry and Industrial Dental Service. Copies of these reports may be secured by addressing the Policyholders Service Bureau, Metropolitan Life Insurance Company, New York City.

HE KNEW HIS RACE TRACKS

Mrs. Gossip: "Oh, doctor, I feel so ill."

Doctor: "Your temperature is normal. Your pulse is exact."

Mrs. Gossip: "Well, doctor, is my tongue coated?"

Doctor: "No, madam; one never finds moss on a race track."

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SEPSIS IN INFANCY AND CHILDHOOD*

ISAAC ABT, M. D.,
Chicago, Ill.

Septic infections occur during every period of life from infancy to senescence. It is the purpose of this paper to give in brief the mechanism of infection and the defense reactions of the organism, particularly as they occur during young life.

Our conceptions concerning sepsis have been continually modified by important advances in immunology and bacteriology. Since the study of bacteriology first began we have gradually learned about the morphology and the action of groups of microorganisms, their virulence, pyogenic properties, their tendency to produce toxins, and their recovery from the blood-stream. Numerous fruitful investigations have been made along this line, and an entirely new vista of knowledge has been brought to light.

Almost any pathogenic microorganism, Shottmuller maintains, may be the cause of sepsis. He enumerates a long list, among which may be mentioned streptococcus pyogenes, streptococcus hemolyticus, streptococcus viridans, streptococcus mucocus, pneumococcus, staphylococcus, gonococcus, meningococcus, Friedlander's bacillus, pyocyaneus, typhoid, paratyphoid, and Frankel's gas bacillus, among others.

We understand by sepsis a general infection of the entire organism without definite or specific visceral changes. The tubercle bacillus produces characteristic changes in the lungs, bones, joints; the typhoid bacillus produces characteristic intestinal ulcers. In septic infections no such characteristic organic lesions prevail. In sepsis there is a primary focus of inflammation from which constantly or periodically bacteria or their toxins are poured into the blood-stream, producing general manifestations which overshadow the local changes in the primary focus. In sepsis the entire organism is involved. We must distinguish sepsis and bacteremia. In the latter condition bacteria may occasionally be recovered from the blood, but there are no deleterious effects. Bacteremia has its source in a focus of infection somewhere in the body, and clinicians have come to believe from actual experience that the presence of bacteria in the circulating blood does not necessarily constitute a diagnosis of sepsis. On the other hand, it may be impossible to recover organisms from the blood in some cases of genuine sepsis. It is thought by many excellent authorities that bacteria do not multiply in the blood during sepsis. The organisms are never so numerous in the blood as might be expected if they multiplied there. After death the bactericidal power of the blood diminishes, and the microorganisms may increase in this medium, the so-called agonal invasion. To repeat then, what has already been said, the cause of general sepsis is not explained by the multiplication of microorganisms in the blood, but their constant or periodic entrance into the blood stream from a focus of infection. Possibly this explains the occurrence of recurrent attacks of fever, chills, and sweating which we see clinically. It must be assumed that bacteria which gain access to the blood are deposited in other tissues or organs, and it has been demonstrated by various investigators that the first place of localization of bacteria is in the reticulo-endothelial system. If the reticulo-endothelial system does not form an effective barrier, a generalized infection will ensue. As long as the bacteria are limited by this line of defense, no general infection occurs.

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*Address delivered before the annual meeting, Nebraska State Medical Association, Lincoln, May 13, 1930.

We may refer briefly to the subject of virulence of invading organisms. Virulence of an organism is a fluctuating and relative quantity. There seems to be clinical evidence that virulence varies from season to season. Every clinician has observed the variability in the severity of epidemics of influenza, scarlet fever, measles and other infections. Sometimes these epidemics are characterized by their mildness, and at other times by their severity. The medical historian and geographer, Hirsch, has pointed out in his study of scarlet fever extending over many years that a cycle of severe manifestations is frequently followed by another cycle milder in character.

A study of septic infections is not only to be considered in the light of virulence of the offending organisms, but also in relation to the response of the defense reaction of the body. As long as this defense mechanism functions effectively, there is no sepsis. Its failure to react adequately leads to generalized infection.

Metchnikoff in 1882 introduced our modern conceptions of immunity by his studies in phagocytosis. Since that time many facts and theories have been elaborated to explain the mechanism by which animals resist infection. Long ago Pettenkofer took the position that the cholera bacillus was only one factor in the causation of Asiatic cholera. He thought that the health of the host and the hygienic conditions under which he lived were equally important. His once famous, though long since forgotten X, Y, Z Theory, based upon his personal observation and critical judgment, has been more or less confirmed in recent times by the more scientific deductions of immunologists and pathologists. To prove his theory, Pettenkofer and his assistant, Emerich, after rendering their stomach contents alkaline, each drank a culture of virulent cholera bacilli. Pettenkofer, then an old man, developed a simple diarrhea. Emerich developed a severe attack of cholera and nearly died. Pettenkofer believed that the validity of his theory was established by this experiment. This theory has been revived and amplified, and the latest views maintain that a major portion of the defense reactions depend on the efficiency of the reticulo-endothelial system. According to Aschoff, the reticulo-endothelial system consists of the reticulum cells of the splenic pulp, the Malpighian corpuscles, the bone marrow, the lymph nodes, and other lymphatic tissues. The cells of the reticulo-endothelial system have great phagocytic power, and experimentally it has been shown that they are able to store up colloids, dyes, metals, bacteria, and cell fragments. Investigators have also pointed out that the reticulo-endothelial system plays an important part in the metabolism of hemoglobin, iron, bile salts, fat, and water. The defensive functions of these cells are of the greatest importance in maintaining the immunity of the organism. Bacteria which are localized in the superficial tissues may be taken up by the histiocytes, and those circulating in the blood are taken up by the Kupfer cells of the liver, so that the blood is rapidly cleared of large quantities of circulating bacteria. If the phagocytes of the reticulo-endothelial system fail to take up the bacteria, the latter continue to swarm in the blood stream, and an overwhelming form of sepsis occurs.

The late Professor Maximow states the problem from a slightly different point of view. He believes that the connective tissue, the so-called mesenchyme, plays a predominant role in destroying noxious agents which endanger the normal course of life. He thinks that three cellular systems play a role in the defensive reaction against infection:

1. First there are the two kinds of hemocytes, the granular leucocytes and the monocytes. When the hemocytes take up their defensive role, leucocytosis is the clinical evidence of their activity.
2. Then there is the endothelium of the blood vessels. Numerous observers maintain that the vascular endothelium participates actively in the general defense reaction against noxious agents. While the function of the vascular endothelium may be important in maintaining or producing immunity, there is no evidence at hand to prove its significance along this line.
3. Finally there is the reticulo-endothelial system. These cells constitute the most important factor in the general defense reactions. Not only do these cells act as phagocytes, but they probably produce enzymes and participate in the formation of antibodies and hemolysins. It has been shown by L. Hektoen that antibody formation resides largely in the hematopoetic system, especially in the liver, bone marrow and spleen. By interfering with the function of these structures the antibody defense is measurably diminished.

J. Ramsay, in a recent publication, presents the hypothesis that successful resistance to bacterial infection depends largely on the orderly response of certain endocrine glands. The sympathicotrophic group, consisting of the thyroid, suprarenals, and pituitary glands and the vagotrophic group, consisting of the parathyroids and pancreas, are said to have an important function in the defense mechanism against infection. He believes that the thyro-parathyroid group regulates the phagocytic properties of the leucocytes in a normal individual. Extirpation of these glands in monkeys produces increased susceptibility to infection. He also attempts to explain the fact that in certain individuals comparatively mild infection may prove fatal without adequate explanation. He thinks such results may be due to endocrine imbalance and to a lowering of the immunity of the organism. While this view is interesting and suggestive, it is like many of the present day opinions concerning the function of the endocrine glands difficult to confirm by clinical or experimental methods.

There is an evident difference in the susceptibility of younger and older individuals to certain infections. Experiment has shown that young animals show a lower resistance to bacterial and protozoan infections than older animals. Neufeld thinks that the greater resistance of older individuals is due to the fact the defensive mechanism is better developed in the mucous membranes and lymphatics. In general, it has been held that the lower immunity of younger individuals may be explained by a number of factors: the poor complement content of the serum, the weak antibody formation, and such non-specific factors as the diminished defensive powers of the mucous membranes and the lymphatics. Every clinician of experience has witnessed the high mortality due to erysipelas in young infants, the severity of scarlet fever, measles, diphtheria and similar infections in babies. These diseases take on a severe form during the infantile period of life, and the mortality is unavoidably high.

SEPSIS IN INFANTS DURING THE FIRST THREE MONTHS

The ravages of septic infections among infants which occurred in the pre-antiseptic and pre-aseptic era are practically unknown to the present generation of physicians, though even now the condition occurs perhaps more frequently than is commonly recognized. All infants are particularly susceptible to septic infection, though this is most marked in the premature. This hyper-susceptibility is due to a number of causes:

1. The skin is readily penetrated because of the thinness of the stratum corneum.
2. The mucosa of the stomach and intestine is readily traversed by living organisms.
3. Antibodies are less readily formed.

Septic infections occur more frequently in artificially fed infants; breast fed infants are protected to a considerable degree by the bactericidal substances in the mother's milk.

There are various portals of entry and modes of infection which are particularly characteristic of sepsis in infancy.

(a) Infections in young infants may be hematogenous, as in the case of a mother suffering from an infectious process. The organisms reach the infants body through the maternal circulation.

(b) Aspiration of infected amniotic fluid may be the source of infection. Bacteria may gain access to the amniotic fluid even though the membranes are intact, or after rupture of the membranes. The infant may aspirate the infected fluid and develop an aspiration pneumonia to be followed by a fatal sepsis. In some instances the amniotic fluid, which contains particles of desquamated epithelium, meconium, vernix caseosa and lanugo, may cause an aspiration pneumonia, the organisms invading the respiratory system secondarily.

(c) Umbilical sepsis is due to faulty aseptic technique in the management of the umbilical wound, and is no longer as frequent as formerly. It is estimated that it occurs in about 1 per cent of babies born in large clinics. The infection may be conveyed to an infant from a mother who is suffering from puerperal sepsis.

(d) Infection may occur through the mouth cavity. Streptococcal infection has been observed in infants who developed Bednar's aphthae. Abrasion of the mucous membrane with subsequent septic infection was not uncommon when washing and wiping the mouth was in vogue.

(e) Enterogenous sepsis is another type. This occurs readily in infants on account of the permeability of the gastro-intestinal mucosa to bacteria. Not only the bottle fed, but also the breast fed infant may be infected by impure milk. Sepsis has developed in infants who have been nursed from mothers suffering from mastitis.

(f) Urinary infection may occur, particularly in female babies. It has been assumed that organisms from fecal discharges may gain access to the urethra and ascend to the bladder, renal pelvis, and renal parenchyma, though a hematogenous infection cannot be excluded in some instances.

Sepsis in infancy is characterized by its sudden onset and severe course. The typical form of sepsis in very young children is the pure septicemic type, characterized by the presence of pathogenic organisms and their toxins in the blood. As a rule, the infection becomes generalized without an intermediary lymphangitis or lymphadenitis. A typical pyemia with the development of metastatic abscesses is not as frequent as in later life, though it does occur. Osteomyelitis, purulent arthritis, and inflammation of the serous membranes may develop as complications. Metastatic empyema, and pneumonia, as well as endocarditis and pericarditis are observed. Purulent peritonitis is frequent after umbilical infection. At the onset the fever is usually very high, but in many cases it declines after several days and becomes irregularly remittent. Before the end collapse with subnormal temperature may develop. In weak asthenic babies the course of the disease may be afebrile. Hemorrhage and icterus are characteristic manifestations of sepsis in infants. The icterus may be so intense that the skin appears bronzed. Hemorrhages may occur into the skin, from the navel, from the mucous membranes, and some cases of melena may be of septic origin. Buehl's disease and Winckel's disease are probably septic in character. Hemorrhagic nephritis is not an infrequent occurrence. Skin eruptions of various kinds are not uncommon, such as roseola, morbilliform or scarlatiniform rashes, sclerema, and edema.

The diagnosis of sepsis in young infants may present great difficulties. The demonstration of a primary focus is not always possible. The appearance of the navel does not always reveal the nature or severity of the infection. Neither umbilical periarteritis nor thrombophlebitis can be diagnosed with certainty in the living child. Internal metastases may be overlooked by the most astute clinician. Hemorrhages into the skin are strikingly suggestive of septic infection. Positive blood cultures, though not easily obtained at this period of life, offer the best confirmatory evidence. Nevertheless, the clinical viewpoint should occupy first place in establishing the diagnosis.

GENERAL SEPSIS PAST INFANCY

Probably the most frequent atrium for septic infections in childhood is through the tonsils, pharynx and communicating cavities. A familiar example is furnished by the severe tonsillar infection of scarlatina. In this connection it may be stated that it is not universally conceded that the hemolytic streptococcus is the causal factor of scarlet fever. There are those who believe, after thoughtful consideration of the whole problem, that scarlet fever is caused by a filtrable virus and that the streptococcus plays the role of a secondary invader. The exciting organism, whether it be a filtrable virus or a secondary invader, may find lodgement in a wide expanse of mucous membrane, including the area from the top of the nose to the larynx with the addition of the mouth cavity, the accessory sinuses, the conjunctival sac, the middle ear with its antrum, the mastoid, and the Eustachian tube. Werner Schulz has recently expressed some doubt as to whether the tonsillar tissue is the point of entrance of the infection or whether the angina occurs during the process of elimination of the organism during a general infection. In point of sequence of infection it may be difficult at times to decide how the infection gained access to the body. Sometimes a tonsillitis occurs during the course of a septic gonorrhea in adults, in typhoid fever, or in syphilis. There can be no doubt that in these diseases tonsillitis is secondary. On the other hand, no one will deny that the tonsillar tissues may be, and frequently are, the atrium of infection. The tonsils and pharynx in scarlet fever very soon may become the site of an inflammatory necrosing process. The neighboring lymph nodes frequently become involved. While these may suppurate and remain local, in the severest cases metastatic or pyemic processes result, such as, endocarditis, pericarditis, myocarditis, pleurisy and pneumonia, osteomyelitis, appendicitis, peritonitis, and septic infarcts of the kidneys and spleen.

Necrotic anginas of streptococcic origin may arise independently of scarlatinal infection and may produce severe septic complications. In the grippal infections, whether due to the presence of the influenza bacillus or to streptococci, severe sepsis with selective localization in the respiratory system or in the nervous system may occur. In these cases meningitis is not of infrequent occurrence, and the influenza bacilli have been recovered from the spinal fluid.

In every case of tonsillar infection or angina, septic infection is a possibility, and probably occurs more frequently than is commonly thought. One is struck by the variety and multiplicity of manifestations. At times the angina occurs ten or fourteen days before septic symptoms manifest themselves. At the onset chills are likely to occur, associated with more or less continuous or remittent fever. The history of chills is of greatest importance. A chill signifies that the focus of infection is in communication with the blood stream and that the bacteria have gained access to the circulation. The occurrence of a chill in the presence of an angina is presumptive evidence of the presence of a thrombophlebitis. Cervical adenopathy develops early; multiple pulmonary abscesses may occur, and metastases may develop in various parts of the body. Thrombophlebitis of the palatal vein and of the cavernous sinuses have been observed in various patients. The local symptoms may improve, but the chills, fever, and metastases continue. As a rule, there is a marked contrast between the mild local symptoms and the severe general condition. Cases of post-anginal sepsis offer an unfavorable prognosis as a rule. Some of the patients run a hyperacute course, ending fatally in a few days, and in other cases the illness extends over a period of weeks or months.

In children past infancy sepsis is of relative frequency after otitis media and its complications, such as lymphadenitis, mastoiditis, and thrombophlebitis of the cerebral sinuses and jugular veins with advancing septic thrombosis.

In addition to the tonsils as a focus of infection, contaminated wounds, abrasions, fissures, phlegmons, severe eczema, and other pustular and vesicular eruptions, as well as, erysipelas may be a source of streptococcic sepsis. Rarely do septic processes originate in the lung. The bronchopneumonias so frequently encountered are nearly always secondary. The same is true of septic scarlet fever. The complicating pneumonias nearly always occur as the result of metastatic processes. Various alimentary infections may act as the foci of infection. Dysentery bacilli, producing intestinal ulcers, may enter the blood stream. The same is true of the ulcers of typhoid fever and tuberculous ulcers of the intestine. A perforated appendix with a subsequent peritonitis may produce a generalized sepsis, if the patient survives the first shock of the infection.

It is not possible here to go into great detail concerning the various clinical forms of sepsis which occur. Briefly, we may mention first the acute type of sepsis which develops rapidly, which is usually hyperacute in its manifestations, and which may cause death in two or three days. The foci of infection producing this sepsis have already been referred to, and may be an angina, a furuncle on the lip, or a multiple furunculosis. Indeed, any phlegmon or abscess may unexpectedly lead to a general sepsis and run an acute and fatal course.

Secondly, there is a chronic form of sepsis, which is also spoken of as sepsis lenta. Clinically this type manifests itself as a rheumatism or a recurrent endocarditis. The chronic form frequently begins acutely, but may persist as a prolonged and protracted disease. The streptococcus viridans is frequently encountered in these cases.

A third form is that characterized by agranulocytosis. This condition, first described by Werner Schulz, involves first the tonsils, pharynx, gums, tongue and larynx, and sometimes there are ulcerations on the genitalia. The local process is necrotic, membranous, and gangrenous. The regional lymph nodes may become swollen, and the liver and spleen are sometimes enlarged. The blood findings are charactertistic. The leucocytes are diminished, and the granulocytes are practically absent from the hemogram. The lymphocytes preponderate. The blood platelets, the red cells, and their hemoglobin content are usually unaltered. It has been assumed that this blood reaction is due to an acute septic process. The profound and varied changes in the blood forming mechanism may be due to a variety of causes, and the hemogram resulting from sepsis may be varied in character. Consequently, agranulocytosis may be one of the possible reactions in the course of a septic process. It is possible to conceive that it may be due to the nature of the organism, its virulence, to the degree of resistance of the host, or to several combined factors. The salient point is that agranulocytosis is probably not a distinct disease and that it should be regarded as a reaction of the organism to a septic infection.

There are various opinions concerning the etiology and pathogenesis of the acute leukemias. There is no certainty concerning their etiology. Nevertheless, there are those hematologists who consider the acute leukemias in the light of a blood reaction to a septic process. Other views maintain that the leukemias are due to an unknown specific organism. A somewhat older school of clinicians held that leukemia is a neoplastic process. It is evident that no dogmatic statements as to etiology are permissible at this time.

TREATMENT

It is regrettable that at this time no sanguine message can be brought regarding the treatment of septic infections. Most important is the prophylaxis. Much has been accomplished in this direction. The conquest of puerperal fever, septic infections of the new-born, and surgical infections in general furnishes one of the most telling chapters in the development of preventive medicine. Surgical procedure still remains one of the most potent forces in the prevention of septicemia. We need only mention the benefits derived from appendectomy, mastoidectomy, or the ligation of a thrombosed jugular vein in post-anginal sepsis. Where foci of infection are accessible and where they can be irradicated the best results are obtained. If it is possible to remove the source of the infection sufficiently early, bacteria are no longer introduced into the general circulation.

Bactericidal and antitoxic treatment: It may be possible in a future day to obtain some chemical agent which will have a bactericidal effect on foci of infection. Up to now we have no satisfactory chemo-therapeutic agent in the treatment of sepsis. Rudolph Benko (*Wiener Med. Wchnschr.*, March, 1930), found that the ordinary antiseptics in use failed to give the desired result as a rule, because they were unable to gain access to the intra-cellular bacteria. The ordinary antiseptics, such as bichloride, pyoktannin, and others could not accomplish the purpose. Nor were the ethyl-cuprine-hydrochloride preparations of Morgenroth more suited, because they were unable to penetrate deeply into the cell. Benko, after many years prepared a substance, ortho-oxy-chinoline, which is characterized by lipoid solubility and high surface tension. This is too irritating for practical use, but after many attempts he found that an ammonium derivitive of this substance was capable of dissolving lipoids, entering the cell and destroying bacteria without causing cellular death. This preparation has not as yet been subjected to sufficient clinical test. If chemotherapy is eventually to succeed in the treatment of sepsis, it seems, according to the theory of Benko, that a preparation should be obtained which is capable of penetrating the cell and producing a bactericidal effect without injuring the cell substance.

When bacteria have found access to the blood stream, the problem that suggests itself is to find, if possible, effective bactericidal agents. Modern investigators agree that the blood itself is a bactericidal fluid. Many tissues of the body are also capable of similar action, though this function is diminished in severe sepsis. It would seem reasonable to introduce bactericidal sera into the body. This has been frequently tried in sepsis without encouraging results. Even the efficacy of immunotherapy, i. e., the injection of vaccines into the donor followed by the injection of his blood into the recipient, does not always give the expected results.

Chemical disinfection has been employed by various investigators. Koch conceived the idea of introducing bichloride of mercury into the body for the treatment of sepsis. He found, however, that this chemical agent coagulated proteins and produced undesirable tissue changes. Since that time numerous chemical substances have been used, more recently the antiseptic dyes. Some investigators have thought that these substances acted not simply as antiseptics, but that they increased the resistance of the organism against infection by stimulating the defense reaction of the cells of the reticulo-endothelial system. However, we must abandon the idea that the injection of dyes is capable of producing complete sterilization of the blood stream. We may state, therefore, that with our present methods and in the present state of our knowledge that there is no efficient bactericidal agent in the treatment of sepsis, whether it be a serum or a chemical disinfectant. Perhaps this does not apply to antitoxic sera. There is considerable evidence that the convalescent serum of scarlet fever or the scarlet fever antitoxin may under certain circumstances neutralize the septic complications of scarlatina.

Symptomatic treatment: Symptomatic treatment is a matter of common knowledge and may be referred to briefly. The nutrition of the patient should be maintained. Alcoholic drinks are sometimes recommended. Vascular collapse is treated with strychnine, adrenalin, and pituitrin. In cardiac decompensation digitalis may give symptomatic relief.

A brief review of non-specific therapy seems to indicate that protein injections of various kinds give poor results or even produce injury.

Opinion is divided concerning the benefits derived from the use of auto-blood injections, intra-muscular, intra-peritoneal blood injections, and blood transfusions. There is no doubt that in cases of thrombopenia and grave anemia that a supply of blood is at least of temporary value. It may be possible to increase the immune bodies of the patient temporarily by introducing into the circulation a fresh supply of healthy blood. A blood injection may be considered the most rational and appropriate form of non-specific therapy.

Recently a form of intravenous therapy, which has been designated the "Blockade Treatment", has been suggested. Ten minutes before an intravenous injection is given, one cc. of pituitrin is administered subcutaneously. Following this an injection intravenously of trypaflavin or some other dye or Pregle's Solution (an antiseptic solution of the sodium salt of hydriotic acid and iodic acid with metallic iodine—0.04%) is administered. It is assumed that the chemo-therapeutic substance is absorbed more slowly and is permitted to come into closer and more prolonged contact with the cells of the reticulo-endothelial system. In this manner the defensive mechanism of the cells is stimulated to increased activity.

The clinical results achieved by the various methods in the treatment of sepsis are not convincing. Claims are made by those who represent various methods of treatment, but there are no large series of cases, and the statistics supplied from the small groups, even if favorable, are not conclusive, because all will agree that types of sepsis vary with the kind of organism, the previous health of the patient, the varying degree of resistance and other factors which render comparison or uniformity difficult or impossible.

MINOR ORGANIC AND FUNCTIONAL DISORDERS OF THE BOWEL*

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In the usual investigation of the gastro-intestinal patient the methods employed are those designed to demonstrate the presence of organic pathology. If the examination fails to produce facts warranting a conclusion that such conditions exist further investigation either ceases or is so inadequate that it has very little practical value. In consequence of this procedure a vast number of minor complaints and functional disorders occur whose exact identity is not established. Treatment of the group is, therefore, empirical, unreliable, and highly unsatisfactory.

The relative importance of an exact diagnosis in this neglected group of cases is well illustrated in a recent communication by Alvarez. In a study of five hundred consecutive gastro-intestinal patients he was able to demonstrate organic pathology in 27.4 per cent while minor disorders and functional conditions comprised 72.6 per cent.

From this statement it is clear that the relative number of cases suffering from minor disorders is sufficiently large to warrant further investigative effort especially along lines which might reasonably be expected to show functional irregularities. A method originally described by Strassberger and Schmidt, was designed to fulfill this requirement. It consists in the feeding of a standard test diet with subsequent examination of the stool for food residues. The diet has been modified in minor ways by a number of subsequent observers. As employed by Lauda it is as follows:

INTESTINAL TEST DIET, "LAUDA"

8 a. m.—Milk, 500 cc. Toast, 50 gm.

10 a. m.—Oatmeal, 500 cc. (Add 50 gms. of Quaker Oats to 350 cc. of water and boil thirty minutes. Sieve and add yolk of one egg, 10 gm. of butter, 200 cc. of hot milk, and salt to taste.)

12 Noon—Beef, 120 gm. (Chopped beef, 120 gm. (raw weight), pan broiled with 20 gm. of butter. Must be rare and contain some raw meat in center.)

Potato, 190 gm. of fresh boiled and mashed or pureed potato, add 100 gm. of milk, 10 gm. of butter, and salt to taste.

4 p. m.—Milk, 500 cc. Toast, 50 gm.

6 p. m.—Oatmeal, 500 cc. (Prepare as at 10 a. m.)

In the usual case the patient is given a carmine powder which serves to mark the appearance of the test diet in the stool. Since the carmine marked specimen probably contains residues from previous diet it is rejected and a stool is not examined, until the diet has been continued for at least three days.

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*Chairman's Address, Medical Section, Nebraska State Medical Association, annual meeting, Lincoln, May 14, 1930.

The advantage of the intestinal test diet consists essentially in the fact that the number of foods ingested are so limited that their residues are easily recognizable in the stool; the quantity of indigestible material is maintained at a minimum; and the total quantities of carbohydrate, protein, and fat are so adjusted that the average normal individual should have no difficulty in completely digesting them.

The chief benefit derived from its use, however, as pointed out by Aaron lies in the fact that all modern coprology with its scientific advances in the systematic diagnosis of intestinal disorders is based on the assumption that this diet produces the typical "Normal Stool". As the stool varies with the diet it is of fundamental importance that such an assumption may be made in order that deviations from normal may be appreciated.

The results of stool examination after the standard test diet are as follows:

NORMAL STOOL AFTER INTESTINAL TEST DIET

Color—light yellow.
Consistency—salve like.
Odor—practically none.
Mucus—none.
Blood—none. (Chemical tests impossible on this diet.)
Pus—none.
Food Residues:
Cellulose—few red brown remnants—pin head size.
Starch—none.
Connective tissue—one or only a few small pieces.
Muscle fibers—few isolated rests—with rounded ends.
Neutral fat—droplets—none. Flakes occasionally.
Soaps and fatty acids—occasional needles.
Ferments—(Trypsin, erepsin, lipase, diastase, etc.) all present.
Flora—(No pathological forms).
Gas formation—very little.
Reaction—almost neutral.
Bilirubin—none.
Urobilin—present.

The tests required for a proper stool examination are hardly within the scope of this paper and only insofar as they are pertinent to the subject under discussion will they be mentioned.

The first group of functional disturbances to be described will be the intestinal dyspepsias. The term dyspepsia includes all the changes that occur in the process of digestion. In a narrower sense, however, it may be limited to the functional disorders in absorption, motility, and secretion which occur without pathological change in the structure of the gastro-intestinal tract.

One of the most interesting types of dyspepsia encountered has been described under the heading of *Intestinal Fermentative Dyspepsia*. This disorder arises from a perculiar difficulty in the digestion of cellulose and starch in the small intestine. In consequence of this disturbance plant cells are swept into the colon where bacteria of the fermentative type penetrate their cellulose covering and digest the starch. This in turn results in a vast increase in this peculiar flora and the colon becomes irritated. With still increasing numbers the organisms then invade and irritate the small intestine where a hyperperistalsis develops which interferes still further in starch and cellulose digestion. Eventually the irritation may become so marked that a definite inflammatory process, entero-colitis, develops. Several theories have been advanced as to the cause of this trouble. Schmidt believed that different individuals had varying power to digest cellulose, and that failure to open the plant cell led to incomplete starch digestion. This idea was confirmed in part by Lohrisch who demonstrated the existence of a cellulose splitting ferment. Strassberger proved that a normal individual produced so much diastase that it was capable of penetrating the cellulose envelope and digesting the starch. He believed that in fermentative dyspepsia there was a lack of diastase—resulting from pancreatic hypo-function. Assuming that this theory is correct then any cause of pancreatic insufficiency may at least be potentially a cause of fermentative dyspepsia. In addition to the lack of enzymatic activity there are, however, other factors involved in the production of clinical symptoms. For example, there are a few individuals who show cellulose and starch rests in their stools who have no abnormal fermentation. It is thought that in such cases the flora is absent which is capable of producing the abnormal fermentative process. Still another hypothesis is to the effect that under identical circumstances different individuals may not react in the same way. An abnormally sensitive mucous membrane may be a deciding factor in the development of clinical symptoms.

In all cases without doubt the ingestion of excessive quantities of cellulose plays a very important role.

A lack of hydrochloric acid in the stomach may influence the development of the condition for cellulose is partially dissolved by this substance.

From a clinical standpoint intestinal fermentative dyspepsia may occur in two forms. The acute type, which is by no means uncommon, is usually diagnosed as an entero-colitis or an intestinal influenza. In such cases the patient usually has a few loose movements and complains of some distension and abdominal distress. Occasionally some stomach symptoms are noted. At times the only complaint may be of gaseous distension with slight distress in the region of the caecum. Frequently a history is obtained of a rather abrupt change from a relatively smooth to a coarse cellulose diet. In Central Europe during the war the general substitution of coarse dark flour resulted in a vast number of individuals suffering with acute fermentative dyspepsia.

In the chronic type stomach symptoms are usually absent. The patient complains of frequent abdominal pains, meteorism, flatulence, disturbed appetite, and general abdominal discomfort. Usually three to four liquid or semi-solid stools are passed daily. As with most other intestinal disorders the symptoms are not characteristic and a diagnosis must be based on the results of stool examination after an intestinal test diet. The usual positive findings may be summarized as follows:

Macroscopic Appearance:
  Color—very light yellow. (Similar to stool of child on milk diet.)
  Consistency—foamy and thin, or semi-solid.
  Odor—sour, butyric acid odor.
  Cellulose—present in form of sago-like particles.
  Mucus—may be present.
Microscopic Appearance:
  Cellulose—present.
  Starch—present.
  Granulosa flora—present.
Chemical:
  Reaction—strongly acid.
  Formation of Gas—very large quantity.

The essential points in the examining of the fermentative stool are the identification of starch, cellulose and granulosa flora. In its native state starch always occurs in the form of a number of granules surrounded by a cellulose membrane or envelope. The processes of boiling and digestion free the starch granules from this covering and dissolve them. In the examination of the fermentative stool it is, therefore, possible to find, (1) free starch granules, (2) membranes filled with granules containing starch, (3) membranes filled with granules but with starch dissolved, and (4) empty membranes.

The identification of starch granules is greatly aided by the addition of Lugol's solution to the microscopic preparation. A blue color is imparted to undigested starch and a reddish blue color develops when the starch has been partially digested and changed to erythro-dextrin. Since bacteria have the power to digest starch it is essential that this test be made on a very fresh stool.

The identification of cellulose is made possible by a comparison with permanent slides made from the few cellulose containing foods contained in the Schmidt test diet and also by the staining reactions of a special reagent containing: Zinc Chloride 10.00; Potassium Iodide 2.50; Iodine 0.25; Water 10.00. Both cellulose and starch turn blue with this reagent.

At times the stool examination fails to reveal the presence of starch but in the same iodine preparation under high power a large number of bacteria, yeast cells, and claustridia containing blue staining granules are found present. These so-called granulosa type organisms occur in every case of fermentative dyspepsia.

The reaction of the stool is roughly tested by dissolving 100 gm. of the latter in distilled water, filtering, adding phenolphthalein, and titrating with N/10 acid or alkali. In fermentative dyspepsia usually 20-25 cc of a N/10 NaOH solution are required.

Gas formation is determined by incubating the stool at body temperature for 24 hours in a fermentation tube. At least one-third of the column of water must be displaced by gas to be definitely positive for this type of dyspepsia.

The presence of mucus in the stool indicates the presence of a complicating entero-colitis.

The treatment of fermentative dyspepsia must meet two definite indications. The first comprises a withdrawal of starch and cellulose from the diet, and a feeding of protein and fat. This immediately relieves the symptoms but does not cure the patient. Gradual addition of vegetable foods, however, usually definitely clears up the trouble. The second indication consists in the administration of cellulose and starch splitting ferments. If stomach acidity is low, dilute hydrochloric acid should be given. Pancreatin, supplying pancreatic diastase, should also be prescribed.

PUTREFACTIVE DYSPEPSIA

A second form of dyspepsia has been described as A Putrefactive Type. This disorder arises from the presence and bacterial digestion of albuminous substances in the bowel. It occurs in a primary form in which the protein is derived from food ingested, and a secondary form in which the albumin is produced by pathological processes in the gallbladder, pancreas, or gastro-intestinal tract.

In carcinoma, for example, an early ulceration takes place from which exudes an albuminous secretion. Inflammatory disease of the gallbladder, pancreas, or gastrointestinal tract may also produce an exudate which undergoes putrefaction. In achylia gastrica proteins from the food are not well digested, undergo putrefaction, and produce a gastrogenic diarrhoea.

The symptoms of putrefactive dyspepsia depend in large part on its cause. If secondary, the symptoms are chiefly those of the under-lying pathology. If primary the patient may have an acute intestinal disturbance of only a few days duration, but as a rule a vague history of an insidious onset and a chronic course is obtained. Usually the early symptoms are intermittent and daily discomfort does not occur until years after the onset. The usual complaint is of gaseous distension and general discomfort. Vomiting may occur. No definite rule concerning evacuations can be established. One patient may have a normal stool in the morning with two to three frequent evacuations in the afternoon. Some have diarrhoea and others may complain of constipation. As is evident from this resume of symptoms a diagnosis can only be made upon examination of the stool. The usual findings are as follows:

Macroscopic Appearance:
  Color—dark.
  Consistency—variable.
  Odor—strongly putrefactive—foul smelling.
  Mucus—may be present.
Microscopic Appearance:
  Meat fibers.
  Connective tissue.
Chemical Findings:
  Reaction strongly alkaline.
  Gas formation—moderate amount.

The chief points in the discovery of the putrefactive stool involve the identification of muscle and connective tissue rests and the determination of a strongly alkaline reaction.

Isolated muscle rests are often found in the normal stool. These are very small, rounded at the ends, light yellow in color, and unrecognizable, except for occasionally a little transverse striation remaining in the center. Such rests are found in large numbers in the putrefactive stool. In addition long muscle fibers with striations undigested and ends sharp and angular are also present.

Long connective tissue fibrils, especially elastic tissue are sometimes differentiated from mucus with difficulty. The addition of 10% acetic acid causes the striation of elastic tissue to disappear and increases the apparent striation of mucus. As previously stated putrefactive dyspepsia may be due to abnormal exudation of albuminous substances into the bowel. In such cases it is always possible that abnormal muscle and connective tissue rests may be absent. In all cases, however, as a result of the putrefactive reaction free ammonia is present in the stool and titration of a given amount as in fermantative dyspepsia will require 20-25 cc of N/10 acid in order to neutralize the alkaline reaction.

Before passing to the subject of treatment it may be stated at this time that in the chronic dyspepsias of either primary fermentative or putrefactive types the hyper-peristalsis of the small intestine frequently results in poor digestion of both cellulose and connective tissue so that the end result is a mixed dyspepsia in which the stool exhibits all of the residues previously described. It may be further stated that the long standing irritation of the bowel also frequently results in the production of an enteritis which is evidenced by the presence of mucus in the stool. These latter facts must be kept constantly in mind in the treatment of any chronic primary intestinal dyspepsia. Where mixed forms exist no rigid rule of diet can be laid down. The following plan, however, is quite effective.

First step—one to three days. Stage of starvation. All food is withdrawn from one to three days. Glucose may be given intravenously and water or very weak tea with sugar given per os. Sugar is digested very high in the intestine and is, therefore, permissible.

Second step—three to five days. Add carbohydrates containing no cellulose such as white bread, toasted, cake, porridge, polished rice. Only one new food should be added daily.

Third step—add milk to diet. (Milk is digested and absorbed high in the intestinal tract).

Fourth step—add pureed carbohydrates containing readily digestible cellulose such as: Spinach, carrots, peas, potatoes.

Fifth step—add usual vegetables of dietary and stop process of pureeing.

Sixth step—add eggs and if no trouble is experienced add meat.

The use of lactose in a pure putrefactive dyspepsia is, of course, very effective for the reason that this sugar is digested very low in the small intestine. It, therefore, provides a medium for the development of the granulosa type organisms. Their development is further increased by addition of viable cultures of B. Acidophilus to the dietary. The increase of fermentative type organisms takes place at the expense of the putrefactive forms and improvement occurs especially if the treatment is accompanied by proper dietary management.

In some cases improvement is only temporary and as a result of the lactose therapy a mixed form of dyspepsia results. The secondary enteritis in most cases requires no treatment and disappears after proper dietary management.

In order that disorders of fat digestion and absorption may be clearly explained it is necessary to briefly review a few of the physiological facts involved. All fat ingested occurs in the form of neutral fat and no digestion occurs until the neutral fat is attacked in the duodenum by lipase, which splits the latter into glycerine and fatty acids. Fatty acids cannot as such be absorbed and so they unite in part with alkali (Ca-Na and K) forming salts which are spoken of as soaps. A portion of the fat remains in the intestine in the form of free fatty acids. Both soaps and fatty acid enter into a loose connection with bile salts and in this form they are all resorbable through the intestinal wall. The presence of bile in the intestinal tract also has another very important function for it serves to activate the pancreas.

The pancreas provides the chief source of lipase but experimentally if the pancreatic duct is ligated in the dog fat stools at first, do not occur. Apparently a reflex is set up which causes the intestinal glands to produce a large amount of lipase. Later as the pancreas becomes atrophic the reflex is abolished and the intestinal function fails.

Another fact of considerable importance is that there is a physiological limit to the amount of fat the organism can utilize. An excessive ingestion of fat always results in a certain amount of neutral fat in the stool. From these facts it is clear that a pancreatic fat stool containing neutral fat, fatty acids, and soaps, can never be due to a functional derangement of the gland, but always means organic pathology.

The fat stool of biliary obstruction contains only fatty acids and soaps for the reason that fat transportability is the only process interfered with.

Still another type of fat stool occurs in tabes mesenterica, amyloidosis, sprue, and hyperthyroidism. In these cases it is thought that the transportability of fat is interfered with as a result of lymphatic obstruction in the first layers of the intestinal mucosa. These stools are also characterized by the presence of fatty acids and soaps.

The fat found in the abnormal stool may occur in forms:

First: Droplets which may be neutral fat or fatty acids.

Second: Flakes—which may be neutral fat, fatty acids, or soaps.

Third: Needles—which may be fatty acids or soaps.

In the examination of the fat stool from the foregoing it is evident that for diagnostic purposes it is not only necessary to determine the presence of fat but it is also essential that neutral fat be differentiated from fatty acids and soaps. The addition of Nile Blue to the specimen stains the neutral fat red whereas all the remainder of the stool stains blue. The use of Sudan III, with 10% acetic acid and heat will stain not only the neutral fat but also the fatty acids and soaps. This latter reaction, therefore, serves to give some idea as to the total amount of fat in the stool and in the absence of a Nile Blue reaction will indicate the presence of fatty acids and soaps.

In a very superficial way the facts just presented cover the usual conditions in which the dyspepsia is produced by disturbances of digestion. Other dyspepsias occur of perhaps greater importance which for the sake of brevity cannot be fully discussed. Among these is a uraemic dyspepsia. In the uraemic state urea is secreted in the bowel. A toxic change occurs in the mucosa, free ammonia is produced which by its irritation causes a hyperperistalsis and a diarrhoea. In hyper-thyroidism and in Addison's disease dyspepsias occur whose origin is in doubt. Allergic dyspepsia probably occurs much more frequently than is commonly recognized. At the onset of acute illnesses stools are frequently rich in albumin and watery in character. In the anaphylactic shock of animals this same phenomenon is observed. At the processes of bacterial invasion are intimately associated with anaphylactic phenomena it is, therefore, very probable that the acute diarrhoea of many acute illnesses is an allergic reaction. For example, the so-called intestinal influenza probably belongs to the group of true allergic dyspepsia. In its chronic form allergic dyspepsia is most commonly confused with mucous colitis. Frequently the history of associated allergic phenomena provide a clue as to the nature of the dyspepsia. The presence of albumin in the stool and eosinophiles in the mucus secreted also is suggestive. Since most of the cases recognized have had a food sensitiveness the diagnosis must necessarily involve a search for the offending protein. This is done by the usual skin tests or the employment of a differential diet such as has been recently suggested by Rowe.

The subject of Nervous Dyspepsia is the most perplexing in all the field of intestinal disorders. It is undoubtedly true that over-work, business cares, great responsibilities and excesses of one kind or another certainly to lead to the development of a true nervous dyspepsia. When we consider, however, the rapid trend of American life we must admit that history of this kind may be obtained in almost any individual one meets. As a matter of diagnostic importance, therefore, its value is open to question. Certain cases of Nervous Dyspepsia exhibit the signs of vagatonia but the vast majority are to be diagnosed only on the negative results of examination. It is, therefore, essential that this examination be sufficiently comprehensive to exclude every type of functional or organic gastro-intestinal disease.

DISCUSSION

DR. HARRY FLANSBURG (Lincoln): First of all I want to compliment Dr. Thompson on his paper. He has attempted to classify some of these functional and minor disturbances of the gastro-intestinal tract and put them on a working basis. Our present classification is very broad and the final details in working up these cases has been neglected either because of lack of knowledge or because of the tediousness of the procedure. Consequently many of these cases are treated for gallbladder disease, chronic appendicitis, or ulcer of the stomach, with very unsatisfactory results. If the statistics of Alvarez are correct practically two-thirds of the people complaining of gastrointestinal symptoms have no definite demonstrable pathology, therefore, it behooves us to make a very complete examination of every case presenting indefinite gastrointestinal symptoms. In addition to the usual examination, Dr. Thompson has emphasized the importance of the stool examination, both macroscopical and microscopical. It is this latter examination which often gives us the information necessary for our diagnosis. He has been taking up two of the most common types of disturbance. The fermentative type which has to do chiefly with carbohydrate digestion and the putrefactive type which has to do with protein digestion. He has considered these types chiefly from the standpoint of secretory disturbances. There are other factors, however, which play an important part, and may even be the primary factors, such as the mechanical. The mechanics of the bowel may be interfered with by adhesions, or a neuromuscular disturbance. One of the other factors which I feel should receive due consideration is the nervous element, which may exercise a great control over the secretions of the intestinal tract. I believe we should be cautious about making a diagnosis on the stool examination alone for it is only part of the general examination.

A. D. DUNN, M. D. (Omaha): I was much interested in Dr. Thompson's discussion of Minor Gastro-intestinal Disorders. I have always felt that the disturbances which are not associated with obvious surgical conditions in the abdomen have not received the attention that they deserve. These so-called "functional" disturbances are most difficult of interpretation. When I returned from Europe in 1910 I was most enthusiastic about the Schmidt-Strassberger diagnostic test-diet methods. After working with their test diet in a desultory fashion for some ten years I came to the following conclusions: First, that it was better to study the problem under diet approximating the general balanced diet used in this region; second, that differentiation between fermentative and putrifactive types could be made in most instances by examining gross stool specimens, and finally, that the examination of stools for undigested starch, meat fibers and connective tissue was of distinct value. When pancreatic digestion is to be investigated a test-diet is of use.

The more I study gastro-intestinal disease the more am I impressed with the importance of motor disturbances. The fact that a barium meal takes three days to pass through a colon is a matter of significance.

The subject that Dr. Thompson has brought before us this morning in such a systematic manner is worthy of the attention of every practitioner of medicine.

DR. JOHN C. THOMPSON (closing): I wish to offer an apology. After giving this paper, I realize that it would have been better to have taken one subject and carried it through with a more complete discussion. The chief object of my paper was to present an idea that after the history of a patient is obtained, careful physical examination, x-ray examination and tests for blood have been made, most gastro-intestinal examinations stop at that point. The putrefactive and fermentative types that I mentioned I think are the least important. I have a feeling that a great many cases who are diagnosed as colitis are really suffering with a chronic allergic dyspepsia. I believe it would make a great deal of difference in some cases if our examination included a functional examination of the bowel. Dr. Dunn stated that in his practice after years of experience he has more or less dropped the absolute measurements of the diet and depended a great deal on examination of the gross stool specimen. There are certain objections that we might offer for that method of procedure. Ingestion of an abnormal amount of neutral fat will always show neutral fat in the stool. There are also times if you are not careful that you will find cellulose in the stool. There are certain cases of fermentative dyspepsias where you find no cellulose and the only finding is the microscopic discovery of a granulosa flora. For the finer points of differentiation I believe that an essential point is to have this weighed and measured diet. The big difficulty is to get patients who are willing to put in the time for this careful examination. It hurries the fellow who is making the diagnosis and usually he sacrifices in accurracy for speed at arriving at a conclusion. I have pointed out I believe that a history of nervous dyspepsia is usually found. Hyperperistalsis plays an important part. There are two methods of finding out about motility; by giving a carmine powder, or a barium meal and watching its passage through the stomach and bowel.

ULCERATIVE COLITIS—WITH SPECIAL REFERENCE TO DIET

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There are many causes of ulceration of the colon. Among the infectious agents, the tubercle bacillus, the Shiga bacillus, and the ameba histolytica are the most important. Besides these forms, there is another type, usually referred to as "Chronic Ulcerative Colitis", which in spite of its hitherto unknown etiology, is a definite clinical entity with a characteristic clinical, proctoscopic and roentgenological picture.

A patient with chronic ulcerative colitis presents himself to the physician because of persistent diarrhea or frequent bloody, muco-purulent rectal discharges. Early in the disease when the lesions are confined to the lower rectum, only the discharges are present, the stools often being hard and scybalous; when the disease has spread into the colon a true diarrhea with liquid stools is found. Griping and tenesmus are frequently severe. the latter may be so marked that the evacuations are uncontrolable. The course of the disease is essentially chronic; remissions and exacerbations are usual. The onset may be fulminating or, at any time during the course, an acute exacerbation may occur. In the latter event, a septic type of fever is present; with the usual chronic course, a low-grade fever is observed. With the progress of the disease weakness, anemia and marked weight loss develope; many of these patients become totally incapacitated.

The complications and sequelae of chronic ulcerative colitis are numerous and often serious. These may be polyposis, malignancy, stricture, perirectal fistula and abscess, endocarditis, arthritis, severe anemia, or perforation resulting in peritonitis or abscess.

As described by Buie, the proctoscopic picture is usually pathognomonic. The findings vary with the stage of the disease. The earliest changes are confined to the lower rectum and consist of a marked hyperemia of the mucosa; later there is added, edema and thickening of the mucous membrane, which bleeds on the slightest trauma. At a still later stage, miliary abscesses are scattered diffusely over the mucosa. With the rupture of the abscesses miliary ulcers are formed, these become coated with a yellowish material which can be wiped off, leaving a bleeding base. When the ulcers heal a pock-like scar remains. The process extends upward so that the entire colon may be involved; the pathological changes are not limited to the mucosa but the submucosa and muscularis are also affected.

The x-ray findings likewise vary with the stage of the disease. When the lesions are confined to the rectum, the x-ray findings may be negative. When the colon is affected, the first evidence is hyper-irritability of the bowel; later the colon becomes narrowed, shortened and lacks haustrations. The opaque enema fills the colon rapidly and the angles at the flexures approach a right angle. If the ulcers are superficial, the outline of the gut is feathery; if they are deeper, a moth-eaten appearance is presented.

Most observers are convinced that this disease is infectious in origin, however, there has been no uniformity of opinion as to the causative organism. Among the micro-organisms found in stool cultures or in cultures taken directly from the lesions, may be mentioned: The B. coli, B. proteus vulgarus, B. pyocyaneus, B. Welchii. the streptococcus, the staphylococcus and a diplococcus resembling the pneumococcus. Several observers have expressed the opinion that the B. coli or some other normal inhabitant of the colon may take on a pathogenic role and attack the bowel wall. They presuppose a primary injury to the mucosa by some dietary or other deficiency. It has also been suggested that the condition may be primarily metabolic in origin. Bargen, by a special technique, has isolated a pneumococcus-like diplococcus from the intestinal lesions and from distant focal infections found in the patients. He has found this organism in practically all of the acute cases and in a high percentage of the chronic cases. On injecting intravenously a culture of this diplococcus, he has succeeded in producing in rabbits lesions of the bowel resembling those found in the patient from whom the culture was obtained. This work of Bargen has been confirmed by others so that this organism will probably be accepted as the specific cause of the disease.

The treatment of ulcerative colitis has been very unsatisfactory. It has consisted. in the main, of rest. a bland diet. intestinal antiseptic and astringents. removal of focal infections and colon irrigations with various solutions. the best of which is probably acriflavine. When this regimen failed to control the disease. surgery has been resorted to, appendicostomy or colostomy being the usual operation. Bargen has reported good results from the use of an autogenous vaccine prepared from his diplococcus.

During the past one and one-half years, three cases of ulcerative colitis have come under our observation. These cases were treated with a diet of high vitamine content. No vaccine was used; although in all three we were able to isolate from the lesions an organism similar to the Bargen bacillus. The only medication used was bismuth and some small doses of opium; one case with an achlorhydria was given dilute hydrochloric acid. The improvement has been so prompt and the results to date have been so satisfactory that it is difficult to refrain from concluding that the diet alone has produced the good result.

On going over the literature, we found that Larimore had previously reported similar results in series of five cases. He says that while there is no direct evidence that the disease is primarily due to a vitamine deficiency. there are several reasons why these patients lack vitamines. The restricted diet given in an attempt to control the diarrhea, is usually poor in vitamines. Again, both the rapid passage of food through the gastro-intestinal tract and the poor absorption, resulting from the pathological changes in the mucosa, prevent proper assimulation of vitamines.

The diet we have used consists of: Orange juice, cod-liver oil, yeast, leafy vegetables, ground red meats (especially liver), and a sufficient amount of bland foods to give a diet of from 2500 to 3000 calories. In all three cases we have used, in addition, liver extract.

Case I. Miss L. F., age 26, saleslady . Admitted to hospital 10-24-28, complaining of diarrhea, cramps, blood and mucus in stools. Trouble began one month ago, has been having six to twelve stools per day. Has lost twelve pounds since onset. Past history is negative except for an attack of diarrhea in 1924, while living in Seattle. This attack confined her to a hospital for six weeks and was diagnosed an amebic dysentery. Since then she has had an attack of diarrhea about once a year which lasted only two or three days.

Physical examination: Tonsils septic-three plus, palor-two plus. Tender over entire colon.

Urine negative. Wassermann negative. Gastric analysis: Free hydrochloric acid 26, total acidity 48. Stool—mucus two plus, blood three plus, no ameba on repeated examination.

Proctoscopic examination: Mucosa very red and bleeds on the slightest trauma, no miliary abscesses or ulcers seen.

Course: Patient placed on a bland diet, given intestinal astringents and colon irrigations of acriflavine solution. Because of the history patient was given emetine and stovarsol, in spite of the absence of ameba from the stool. The diarrhea continued and her general condition became so much worse that a colostomy was considered. At this time a second proctoscopic examination was made and the typical miliary ulcers of ulcerative colitis were found. A culture from the lesions showed a Gram positive diplococcus. The high vitamine diet was started and in about one week improvement began. In six weeks the patient was able to leave the hospital. No vaccine was used. Small doses of intestinal astringents were continued. After leaving the hospital the patient remained on the diet; the improvement continued so that in three months the patient was symptomatically well and has remained so to date.

Case II. Mr. W. McK., age 52, printer, admitted to hospital 5-20-29. complaining of diarrhea, griping pains in abdomen, and loss of weight. Trouble began on March 1st, following an attack of "flu". At onset stools numbered 12 to 15 each day; for the past two weeks he has had 20 to 30 stools a day, which contained mucus and blood and were preceded by severe cramps. Has lost sixteen pounds in weight and has become very weak.

Past history: Unimportant except for an attack of diarrhea six years ago which lasted one month. He was told at that time that he had "ulcers of the bowel".

Physical examination: Negative except for some infected tonsils.

Laboratory findings: Urine negative. Wassermann negative. Fractional test meal showed an absence of free HCl, total acidity varied from twenty to thirty. Feces contained mucus and blood but no ameba. A moderately severe secondary anemia was present. Rectoscopic examination showed the presence of miliary ulcers. Cultures from the lesions gave an abundant growth of Gram positive diplococci.

Course: On June 6th the high vitamine diet was started, the hydrochloric acid, which the patient had been receiving, was continued. The improvement began in a few days, the patient left the hospital after one month, having five stools per day. The blood had disappeared from the stools and he had gained in weight and strength. When last seen, eight months after leaving the hospital, the patient was working, had regained all the weight lost and was having three bowel movements a day, a condition which he considered normal as he had always had from three to four stools per day.

Case III. Mr. S. P., age 41, farmer, admitted to hospital 5-17-29, complaining of diarrhea, vomiting, loss of weight.

While in France in 1918, he had an attack of "trench diarrhea" which was epidemic at the time. This was mild and lasted only a few days. Since his discharge from the army, he has had an attack of diarrhea each year during "harvest time". During the attacks he has occasionally noted the presence of blood in the stool.

The present attack dates back to May, 1928; the diarrhea has been constant since the onset, but has varied in severity. During the last summer he spent six weeks in a hospital with some improvement. In December he contracted the "flu" and at once became worse. He has had a bowel movement every one to two hours, night and day, the stools were always liquid and contained slime and blood. During the past three weeks he has vomited a great deal and has suffered from hemorrhoids.

Physical examination: Tonsils—two plus. Tender over sigmoid and in epigastrium. Thrombosed hemorrhoids—three plus.

Laboratory reports: Fractional test meal—free HCl varies from 30-40; total acidity from 60-80. Stool examination showed the presence of mucus, pus cells and red blood cells, no ameba. Moderate secondary anemia present. Proctoscopic examination showed typical miliary ulcers. A Gram positive diplococcus was found in cultures taken from the ulcers.

Within ten days after starting the diet, the patient began to improve. The vomiting ceased, the number of stools decreased, and he began to gain weight. Patient left the hospital on 6-14-29, having only two stools per day. When last heard from, eleven months after leaving the hospital, the patient was feeling good, had gained twenty-five pounds in weight, and was able to carry on his work.

The three cases of ulcerative colitis reported have been treated by a diet of high vitamine content, and the results have been very gratifying. One cannot, of course, draw any definite conclusions from three cases; but, adding these to the cases reported by Larimore, one must feel that the diet is a very potent factor in the recovery of these patients; and, that it, at least, might be added with benefit to any other therapeutic procedure used.

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THROMBO-ANGIITIS OBLITERANS*

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One of the conditions to consider in gangrene is thrombo-angiitis obliterans which is an inflammation involving in most instances the deeper vessels of the extremities including both arteries and veins. In this disease, the patients complain of indefinite pains in the foot, in the calf of the leg, or in the toes, and particularly of a sense of numbness or coldness whenever the weather is unfavorable Upon examination we see that one or both feet are markedly blanched, almost cadaveric in appearance, cold to the touch, and that neither the dorsalis pedis nor the posterior tibial artery pulsates. When the foot becomes warm some color gradually returns. Some patients complain of rheumatic pains in the leg. Others are able to walk only a short distance before the advent of paroxysmal, shooting, cramp-like pains in the calf of the leg makes it imperative for them to stop short. Some of these cases show the typical symptoms of intermittent claudication. After months, or, in some cases, even years, have elapsed, trophic disturbances make their appearance, one which gives the foot the appearance typical of erythromelalgia. When the foot is in the pendant position there is a bright red blush in the toes and the anterior part of the foot. This comes on rather rapidly, extending in some cases to the ankle or slightly above. Soon a blister, hemorrhagic bleb, or ulcer develops near the tip of one of the toes, usually the big toe, frequently under the nail, and when this condition ensues the local pain becomes intense. Such trophic disturbances may at times make little progress and last for months; sometimes, however, the skin in the whole neighborhood shows cyanotic discoloration, and dry gangrene of the whole toe is an early issue. Even before the gangrene, at the ulcerative stage, amputation may become imperative because of the intensity of the pain. The left leg is usually the first to become affected, although both limbs may show vascular disturbances almost simultaneously, and, when such is the case, the trophic changes, the ischemia, or the reddening, may give rise to a symptom-complex, often diagnosed as Raynaud's disease. In brief, after longer or shorter periods, characterized by pain, coldness of the feet, ischemia, intermittent claudication and erythromelalgic symptoms, evidences of trophic disturbances appear which finally pass over into a condition of dry gangrene. Other patients may have trophic disorders only. Pathology of the acute stage presents an inflammatory process involving all the coats of the vessels. The lumen is filled with occlusive thrombosis and finally formation of military giant cell foci, then the stage of organization or healing and the canalization of the clot and disappearance of the inflammatory products.

In diagnosing thrombo-angiitis obliterans one must think of other organic vascular diseases of the extremities, such as arterio-sclerosis with gangrene. Arteriosclerosis will rarely be seen by the physician except in the advanced form until men and women seek the physician for yearly or semi-annual examination. Then the initial palpable arteries, the slight hypertrophy of the heart, and the early accented second aortic sound, together with the increased blood-pressure, will direct attention to the insidious malady.

Gangrene, usually of the dry, mummifying type, is not infrequently seen in the fingers or toes, or even on the whole foot. In such cases there is endarteritis obliterans, or there may be thrombo-angiitis obliterans. Other complications which affect the brain, the kidneys, and the heart are not dealt with in this paper. Other conditions, such as erythromelalgia and Raynaud's disease, are to be considered with, perhaps, some types of diabetic gangrene, and one should remember that Raynaud's disease may be associated with arteriosclerosis or diabetes.

CASE REPORT:

E. C. S., age 36, American, white, male, married, electrician.

Past history: In childhood, had middle-ear disease which left the hearing in right ear impaired. No previous injury or illness except a recurring headache since childhood, and in 1920 he froze the fingers of both hands, toes of both feet, and the glans-penis. Uses no alcohol but is a cigaret smoker.

History of present complaint: During November, 1923, complained of indefinite pain in the palm and index finger of right hand and fingers became cold easily. In May, 1924, fingers became sensitive and extremely painful, at first involving one-half of the palmer surface of the terminal phalanx of the index finger. In the course of three weeks, the middle and ring fingers were involved with a callous, the pain increasing in severity. At this time no pulse could be felt in the index or middle fingers, although the pulse was felt in the proximal phalanx of the ring finger. The fingers beyond the middle and terminal phalanges were blanched, cold and calloused on the edge.

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*Presented to the Third Councilor District meeting, Auburn, November 20, 1929.

Examination in August, 1924, revealed nothing aside from the local findings, except a perforated tympanic membrane and a right direct inguinal hernia. Blood pressure was 130/85. Urine negative. Wassermann negative.

Local findings: The index, middle and ring fingers of the right hand were as cold as those of a cadaver. On the ball of the index and ring fingers, there was a callous covering the whole surface which had practically sloughed on the index finger leaving an indolent ulcer.

Diagnosis: Thrombo-angiitis obliterans in the earlier stages, i. e., before gangrene.

Previous treatment with narcotics and heat had given but very little relief. Pain was markedly worse upon elevation and considerably relieved when held in the dependent position, which required the patient to lie at night with the arm hanging over the edge of the bed in order to secure his rest. The patient was treated by Dr. Wm. Shepherd of Rulo, and myself, when he was given diathermy with the following technique: The tips of the four fingers of the right hand were immersed in a basin containing salt water and the active electrode with the indifferent electrode above the elbow; 200 to 250 ma. of current were used for a period of twenty minutes, this being the maximum amount of current tolerated without increasing the pain. Patient was treated at intervals of two days for three treatments, then at intervals of three days for two treatments and again in one week. The first treatment relieved the pain completely for a period of ten hours at which time it gradually returned and became very severe. The patient continued to have pain during the course of his treatment, while at the same time, the trophic condition rapidly improved and the ulcer healed, the patient remarking that he could not understand why the pain would continue when his fingers looked so good. At the end of three weeks the callouses had separated and the ulcer had healed leaving a very thin, delicate skin on the site of the old callouses, which was exceedingly painful to the slightest touch. Two weeks later, when the epidermis had thickened and toughened, the pain ceased. Three months after treatment, the patient had completely recovered from pain and was following his vocation as an electrician with no discomfort. The remaining evidence of the diseases, at that time, was noted by the atrophy of the balls of the fingers, leaving the terminal phalanges close beneath the skin. Since treatment in 1924, patient has had no discomfort except that the fingers are still somewhat sensitive to cold and the ball of the right index finger is considerably smaller than that of the left.

CASE REPORT

Mrs. T. L. C., age 79, housewife.

Past history: Patient well up to time of marriage at age 19. Since marriage, has had six children, the youngest now 38. In April, 1909, was operated upon for removal of the uterus (probable carcinoma); was confined to the hospital for five weeks at that time.

Present complaint: Gangrene of all toes of the right foot. Present trouble started in April, 1929, when patient states she had trimmed a soft corn next to the small toe and a callous on the big toe and that sorness in the toes started two days later. Following application of "Freezone" (corn medicine), corn and callous came off but pain continued. (This, I believe, was only incidental to the main trouble.) The toes started to become black and blue and at that time she consulted Dr. G. M. McArdle who treated the foot locally at home by soaking in hot water three times daily with application of ointment and instructed the patient to be off her feet. The foot seemed to improve silghtly and then pain and soreness recurred and became constant. She was referred to the Falls City Hospital on May 31st, 1929.

Examination at that time showed gangrene involving all the toes of the foot with considerable pain in the entire leg below the knee, coldness of the foot, ischemia and some trophic changes. The gangrene portion of the foot was dry and insensitive to pain, the toes becoming completely dehydrated. Line of demarcation was not fully established at this time.

Patient was treated with diathermy which, we believe, hastened the line of demarcation. On June 4th, transverse amputation was made of all the metatarsels of the foot midway between the carpal-metatarsel joints; at the time of operation, no vessels were clamped and no bleeding occurred. After a few days, patient was again given diathermy daily for the remaining time she was in the hospital which was the following six weeks. At the time of dismissal the foot had completely healed with reestablishment of the circulation, patient was able to walk and was free from pain. During the time she was confined to the hospital, she received a hotwater bag burn on the inner surface of the leg at the junction of the lower and middle thirds, approximately two inches long by one inch wide. This area sloughed and healing was slow due to the impaired circulation. However, the wound was completely healed two months after the injury.

Patient returned to the hospital on September 12th complaining of more or less indefinite pain in the calf and the foot of the opposite leg which pain had existed four days before re-entering. The leg was blanched and pearly-white and was cold to the touch to a point three inches below the knee.

Examination showed right foot, which had been previously operated upon and treated, to be healed, the circulation good and the foot warm. The left leg was cold and on elevation a few minutes, would become pearly-white and blanched. Upon placing it in a hanging position it would redden, showing the return of circulation. Pulsations of both anterior and posterior tibial arteries were considerably decreased but not obliterated.

Diagnosis was made of arteritis obliterans.

Patient was placed to bed with diathermy treatments daily through the leg. She remained in the hospital two weeks and three days at the end of which time, circulation had re-established and patient returned home free from the original trouble. She continued the treatments, however, for the following three weeks and at the present time is free from any of the original complaints.

CONCLUSION

Diathermy dilates the veins and capillaries, produces an increased collateral circulation, relieving congestion, and frees the tissues of waste products. It particularly increases the activity of the cells—the work-shop of the body—thus restoring the tissues to their normal condition. In my opinion, diathermy is the greatest adjunct we have today in relieving pain and in restoring circulation to the extremities.

GANGRENE OF THE EXTREMITIES—(RAYNAUD'S TYPE)*

H. R. MINER, M. D.,
Falls City, Nebr.

The three commonest types of gangrene of the extremities are from diabetes, arteriosclerosis and vasomotor disturbances. I shall confine myself to the latter, commonly called Raynaud's disease, he having called attention to this condition in 1862 and as late as 1874 after much further research.

Etiology: If his conclusions and those of others who have investigated it are correct it is brought about by irritation of the net work of sympathetic, vasomotor nerves which surround the blood vessels and regulate the supply of the parts, resulting in a spasm of the arterioles and venules sufficient to deprive the part of its blood supply. This may be anything from a blanching of the skin with coldness and numbness to cyanosis and in the extreme gangrene.

Symptomology: The first thing complained of will usually be coldness and numbness of the part or parts with or without pain, which may be slight or severe in this stage or all of them. It may never progress beyond this and may continue for a short time or years, recover spontaneously for years, and then recur or be intermittent. If it progresses to the more serious forms, cyanosis will succeed and later gangrene, nearly always symmetrical. The toes, the fingers, the chin, the tips of the ears and even the cheeks may be involved. Significant is the fact that it is nearly always symmetrical, though one side may be more severely affected than the other.

It may be bilateral in the other two forms, but is not common, while it is the exception in Raynaud's disease to be otherwise. It may be associated in the same patient with either or both of the other forms and frequently is. The age will usually be a young adult around thirty, though cases have been seen in children and in those as old as seventy. The x-ray will usually show the hardened arterioles of sclerosis and the urine the sugar of diabetes.

Many conditions may be associated with or possibly cause this disease or it may develop as a pure neurosis. Among such morbid conditions(1) with which it has been found associated are hysteria, epilepsy, myelitis, neurasthenia, chlorosis, spinal tumors, syphilis, tuberculosis, chorea, Bright's disease and diabetes insipidus. It may also be present in or with various of the neuro-dermatoses — urticaria, scleroderma and some of the ehythemas—but the most common and important causative agent is cold and wet. In this it is identical with or at least similar to(2) "Trench-foot" and frost bite. All three are vasomotor disturbances. Naturally, too, one would not be surprised to find the general condition below normal, though it may be seemingly unimpaired.

Treatment, of course, would consist primarily of any measure which would help to restore a normal blood supply to the affected parts and many will naturally suggest themselves or are recognized methods for the treatment of this or the concommitant disease.

Removal of a section of the sympathetic network surrounding the main artery has seemed to be followed by the most pronounced relief.

In the case of the foot this is done with the femoral artery for a space of about two inches just below Poupart's ligament. The ability of the sympathetic nerve to produce the spasm is thus interrupted. Many other things have been tried upon more or less theoretical basis with more or less questionable success but, strangely enough, what seems to be the most efficient and at the same time conservative treatment, was discovered empirically, almost, in fact, by chance and consists in the intravenous use of a foreign proteid.

Dr. W. O. Bridges called my attention to an article in the *Journal of the A. M. A.*, October 20, 1928, by Drs. Allen and Southwick, of Boston, who were led to use it from an article by Dr. G. E. Brown, to determine cases which were suitable for the palliative operation upon sympathetic nerve.

They say(3) "Early in these experiments we found that these reactions were similar to those seen following periarterial sympathectomy. With the hyperemia there was associated a marked relief from pain and objective appearances of apparent improvement in the local condition of the lesion. It then occurred to us that a repetition of this reaction might be produced at properly spaced intervals with a subsequent healing of ulceration without the aid of surgical intervention. During the past sixteen months we have treated a small series of cases representing a variety of peripheral vascular disturbances with repeated intravenous injections of foreign protein in the form of typhoid vaccine. We use the standard vaccine prepared by the bacteriological laboratories of the State of Massachusetts. It consists of a mixture of typhoid and paratyphoid A and B bacilli, 1 cc. containing 2,500 million organisms. For the average patient, an initial dose of 0.05 cc. is used. This contains 125 million bacilli. If the subsequent reaction is too severe, less may be given in future injections. The largest dose we have used is 300 million and the smallest 25 million organisms. The desired reaction is an elevation of the mouth temperature of from 3 to 5 degrees Fahrenheit. It is important not to make the reaction too severe, as the patient may not wish to have the treatment repeated. In many of the cases, it is necessary to repeat the injections at frequent intervals over a period of several months' time, before marked benefit is noticed. In patients with definite obliterative disease we usually start with weekly injections and increase the time interval to every month or two months, as the patient improves. We have found that, if the injections are given more frequently than once a week, an equal reaction is not obtained from a repetition of the same dose. If given once a week or less frequently, this amount of protein seems to give approximately the same reaction indefinitely."

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*Read before the meeting of the Third Councilor District, Auburn, Nebr., November 20, 1929.

"Following the intravenous injection of typhoid vaccine, a typical and quite constant reaction takes place. First, there is a latent period of from half an hour to two hours during which no marked changes are noted. The patient then begins to feel cold, and very rapidly develops a chill which frequently is shaking in nature and may last for half an hour. The extremities feel colder and cyanosis may increase during this period. Pre-existing pain often increases to such an extent that morphine is required. Various body aches appear. The temperature then begins to rise and in the course of about three hours reaches its maximum. With the increase in temperature the pain and other uncomfortable sensations become less marked, and the extremities become warmer. The color of the hands and feet improves and the patient may complain of a burning sensation as the result of an increase in the temperature of the extremities. The mouth temperature then begins to fall from the high peak quite abruptly, but not as rapidly as it rose, so that in the course of five or six hours it has usually returned to normal. The whole reaction is usually complete within twelve hours. Occasionally there may be a secondary rise in temperature the following day, and rarely the mouth temperature remains elevated a degree or so for several days. The temperature of the extremities may become elevated as much as 15 degrees F. in severe obliterative disease during the reaction when the mouth temperature is elevated about 5 degrees. At the end of the reaction, when the mouth temperature is approximately normal, the temperature of the foot is frequently elevated from 5 to 15 degrees F. above its previous level. We have found in several instances that the surface temperature of the foot did not return to its former level for as long as six to eight days after the treatment. Occasionally the surface temperature of the extremity returns to its previous level within twenty-four hours.

"Nonspecific foreign protein (typhoid vaccine intravenously) gives a definite reaction much like that observed following periarterial sympathectomy, with a definite relief from pain and a beneficial change in the appearance of the lesions. The reaction can be repeated at intervals of seven days or more with the subsequent healing of ulcerations. The treatment should be combined with proper hygienic and minor surgical operations when necessary, as it enhances the safety of such procedures.

"We believe that the method here described hastens the development of an adequate collateral circulation more effectively than any conservative measures heretofore suggested."

All authorities advise and urge conservatism in surgical procedure and results seem to show that there may be a much greater saving of tissue and parts than would seem at all possible earlier. What appear at first to be hopeless gangrenous conditions loosen and show healthy granulations under a superficial discolored area. Skin areas which are distinctly discolored and mottled recover, not alone with the foreign proteid but other rational treatments. None, perhaps, are of greater benefit or do more good than diathermy and the lights.

I wish now to present the history of a case still under treatment.

Falls City Hospital. Occupation, laborer. Personal history.

See Previous History No. 906.

Present complaint: Much pain in the first, second and third toes of right foot, which, during the last week, has caused extreme suffering. The skin at first was slightly ecchymosed with distinct bluish spots the size of a grain of wheat; this has increased until the discoloration, particularly in the second toe, is marked and quite dark.

History of present complaint: Several weeks ago was first called to see this patient when he had marked distress and erythematous eruption all over the face, very slightly vesiculated, also some on the hands. Was unable to assign any cause for this eruption unless it was handling bridge timbers while at work for the county, on the bridge gang, and being in the water, mud and weeds as was necessitated by his work; also because of the heavy rains and damage to the bridges, was compelled to work a good deal overtime. As the face condition improved, complained of a severe pain starting in the right kidney region extending downward, apparently through the course of the right spermatic cord to testicle; this was extremely severe for several days. As this began to improve, began to have almost intolerable itching on the sole of right foot followed by the present condition as described above. Complained of similar pain in the left cord at the time of onset of discoloration of left foot which followed that of the right about ten days. General condition has not been good; appetite poor, and sleep poor, partly owing to the almost continuous pain, eruption on the skin, itching, almost intolerable, followed by pain in the cord and later by pain in the foot in what is undoubtedly gangrenous development from an endarteritis obliterans and deformans. (This later proved to be a Raynaud's Disease and as it developed was more and more clear.)

Diagnosis: Beginning non-traumatic gangrene of right foot. (Later also of the left and exactly symmetrical with the diagnosis clearly, Raynaud's disease.)

Treatment: Advised hospitalization, daily diathermy to both feet and legs and blood and spinal fluid Wasserman. (This was done and the specimens sent to the State Laboratory, Lincoln, both negative). Was brought to the hospital today and the same condition is commencing with the same toes on the left foot. On both feet the 4th and 5th toes are absolutely free of this involvement.

July 22, 1929.

H. R. Miner, attending physician.

SUPPLEMENTARY PROGRESS NOTES

August 3, 1929 to October 16, 1929.

By this date there had been an acute exacerbation of the trouble in both feet though the right was markedly worse than left. The discoloration had extended up the foot to and including the ankle, having a mottled dusky color, shading from this to clear gangrenous black from the tarso-metatarsal joints on both the dorsal and plantar surfaces, with a strip one inch wide running along the outer side of the foot, right only, to the heel. Pain increased and described as they do in an aggravated case of metatarsalgia. At this time my attention was called to an article in the Sept. 28, 1928 issue of A. M. A., by (Dr. W. O. Bridges, Omaha) the group studying gangrene of the extremities reporting the use of anti-typhoid vaccine, intravenously, 125,000,000 and repeated once a week for five or six times. There was marked reaction and rapid improvement of the condition until today instead of requiring amputation of the foot above the ankle it looks as if he would lose no more than the toes at the metatarsal-phalangeal joints and possibly even less than that, right foot only.

It is my opinion that this is a true Raynaud's disease and was brought on by the exposure to cold and wet in his work for the county during the flood period shortly preceding the onset of the trouble.

H. R. Miner.

Nov. 4, 1929.

The gangrenous condition has been steadily decreasing and the granulations have actually seemed to be crowding the gangrenous tissue already formed off the end of the foot.

The patch on the dorsum extending from the toes to the mid-foot separated and when lifted had good healthy granulations underneath, was clipped off near the toes and skinned over rapidly. Toes were removed at the metatarso-phalangeal joints and it was found that healthy granulations are pushing in a pryamid-shape even under the black, dried gangrenous toes.

Diathermy and infra-red still being used and the typhoid vaccine intravenously. The latter about once a month now. The black patch on outside of foot extending to heel has come off spontaneously and pink, healthy, normal skin covers all the area.

H. R. Miner.

March 3, 1930.

Right foot is entirely healed leaving everything but the toes and the articular ends of the metatarsal bones which do not quite cover over with the granulations spontaneously. This leaves all of the foot except the toes and a very serviceable member, much more valuable than when just the heel is left.

Left foot is all well except the big toe from which the first joint had to be removed to secure covering with granulations and skin.

Can now walk with the aid of crutches with little difficulty and should soon be able to discard them.

General health excellent and has had no typhoid vaccine for 2 months though once at about that time had a little coldness of the left hand and a little blueness of the feet. Given the same dose as before he had rapid recovery and as positive a reaction as at the previous exhibitions.

Apparently the results are due entirely to the vaccine and has left a competent wage earner instead of a burden to the family and community.

That should be justification enough to call your attention to the results of one case.

H. R. Miner.

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ACRODYNIA WITH REPORT OF THREE CASES

FLOYD CLARKE, M. D., F. A. C. P.,
Omaha, Nebr.

Acrodynia means, literally, a painful extremity. Numerous writers have suggested different names for the disease—namely, dermatopolyneuritis, Erythrodema polyneuritis, and recently Warthin has suggested that the disease be called Swift's Disease. Other names suggested are Freer's Disease, Pink Disease, and erythrodema.

Usually credit is given to Swift of Adelaide, Australia, who probably first described the disease in 1914. An epidemic somewhat resembling this disease occurred in France earlier than this, but apparently in this epidemic adults were affected rather more frequently than children. The opinion seems to prevail that this particular disease is peculiar to children. In this country Bilderbach of Portland, Oregon, was the first to describe the disease in 1920. This was quickly followed by reports of others until at the present time over one hundred case reports are in the American literature.

Etiology: The real cause of the disease is not known. McClendon suggests three possible causes: 1. Infection. 2. Avitaminosis. 3. Anaphylactic phenomenon. The disease is apparently slightly more common in males than in females. It affects infants and young children, usually under four years of age. It occurs at all seasons of the year. The disease is apparently as common in the city as in the country. Most authors writing on the subject have discarded the theory that the disease is caused by a peculiar anaphylactic phenomenon. Some believe that its cause is an avitaminosis, but most are of the opinion that it is an infection.

The organism which causes the infection may be lodged somewhere in the upper respiratory tract; in the tonsils, adenoids, sinuses, teeth or gums. In my own cases both food deficiency and infection were possible etiologic factors. Wycoff, in a recent article in which he reports ten cases, entirely rules out food deficiency. Most of his cases were perfectly fed, some even on breast milk. All laboratory examinations have been negative. Wassermann negative. Blood cultures negative. Von Pirquet negative. Urine and stool normal. The leucocyte count is frequently increased from 10,000 to 40,000 suggesting that the disease may be infectious in origin. Kenrahan and Kennedy, after reporting an autopsy on one of their cases, conclude that the frequent association of this disease with infection of the upper respiratory tract and the degenerative character of the changes in the nervous system favor the view that the disease is an infection.

Pathology: Very few complete autopsies have been done. Byfeld reports one autopsy complicated by tuberculosis, which showed involvement of an occasional anterior horn cell of the spinal cord, gliosis about the central canal, and edema of the sensory roots. Patterson and Greenfield report autopsies on two cases, one of which was complicated by tuberculosis. They conclude that there is evidence of a peripheral neuritis and of chronic inflammatory changes in the spinal cord and nerve roots, in which the sensory nerve roots are more affected than the motor.

Symptoms: In most cases there is a previous history of a rather indefinite but somewhat prolonged upper respiratory tract infection. In my own cases there was also a history of improper food. The child being allowed what he liked to eat rather than what he should have. None of the cases had received a sufficient quantity of green vegetables. Two of them were brought in complaining of pain in the limbs. Briefly summarized, the symptoms are all enumerated under Bilderbach's six Ps. 1. Pain. 2. Pink hands and feet. 3. Peeling. 4. Prostration. 5. Perspiration. 6. Paraesthesia. To this a seventh might be added, namely, Photophobia. One striking feature of this peculiar disease is the variableness of the severity of its symptoms. The youngster who comes in complaining of slight pain in the limbs, perspiration, irritableness, loss of appetite, and a red rash on hands and feet, is in marked contrast to the unhappy, sleepless, scratching, profusely perspiring boy, who constantly rubs together his hands and feet, unable to bear the light, with his hair coming out in great patches, and with some of his teeth falling out.

The severity of the symptoms may depend on how long the disease has been present, and the resistance of the individual. Characteristic of all cases is the rash, which appears on the hands and feet. It is a scarlet red rash. After a time peeling occurs, giving the areas involved a beefy red appearance. Commonly on the body a slightly papular rash appears, caused probably from the irritating clothing in contact with a sensitive, perspiring skin. There is loss of appetite, inability to sleep, irritableness, and loss of weight. Pruritis and photophobia are frequent symptoms.

Differential diagnosis. The only disease which would be at all similar to acrodynia would be pellagra. Acrodynia occurs at any season, pellagra usually only in the spring and fall. Acrodynia has no tendency to recur. The rash is less persistent in acrodynia than that of pellagra. Pellagra patients often finally become insane. Insanity does not occur in acrodynia. The itching, burning, and general wretchedness is not present in pellagra. Recovery is the rule in acrodynia.

Treatment: The majority of those who have reported cases seem to agree that at least two procedures are necessary. 1. Food rich in vitamin B, and 2, exposure of the body to the actinic ray. A particular exception to this is Rodda of Minneapolis, who reports seventeen cases and concludes that early recognition of the disease with prompt removal of the tonsils is followed by rapid recovery. Rodda's work has not been confirmed by other observers.

In all probability the cause of the disease is an infection which finds its lodging place somewhere in the upper respiratory tract. The tonsils are a rather small part of the upper respiratory tract. Without more knowledge which would show that the tonsils are the one source of infection in this disease, very little justification is apparent for their removal, especially in a disease which particularly affects children under five years. Therefore, our treatment consists largely in building up the child's reserve force by proper diet, cod liver oil, and sunshine.

REPORT OF CASES

D. P. First seen at age four and one-half months, when he was brought in because of failure to gain and lack of appetite. He was an adopted baby. Wassermann on mother at time of baby's birth was negative. He was fed on an adequate modified milk mixture, but his appetite was never very good, and he was always pale and anemic looking. At six months of age he weighed thirteen pounds and twelve ounces. At seven months of age he had an attack of measles. At about nine months of age he had a diarrheal attack. He was restless nights. He would take his milk mixture well, but would not take vegetables or eggs. I did not see the body from the time he was six months of age until he was brought in at ten months. At this time he perspired a great deal; he had photophobia; was very restless nights; he was pale and anemic looking. His diet consisted of potato, custard, potato soup, milk toast, bacon rind, cereal, and milk. He had a peculiar petechial eruption over his body and his hands and feet were very red and inflamed. Later the skin on his hands and feet peeled off in great patches. He had a very marked pruritis, particularly manifest when his clothing was removed. He was placed in a hospital for about ten days; was given a diet of vegetables, raw milk and egg. He was given cod liver oil and ultra violet light daily. He improved rather rapidly in his general appearance, but his weight has not improved in proportion. At fifteen months he weighed nineteen pounds and two ounces.

N. S. Approximately two years of age. Patient of Dr. G. D. Anderson, West Point, Nebraska. Complained of eruption on hands and pain in legs. Was breast fed one year. Given other food at six months. Never ill, except occasional colds, until December, 1928, when he had a convulsion. Has been ill since. He has been restless nights, complains of pain in legs, there is a petechial eruption over his body. The hands and feet are red and inflamed. He scratches himself almost constantly. He is extremely irritable. There is no photophobia. He perspires a great deal. His tonsils are somewhat enlarged. He is rachitic. His muscles are soft and flabby. He walks with difficulty as though in pain. His patellar reflexes could not be obtained. His blood Wassermann was negative. Dr. Anderson reports that the patient recovered completely under proper diet, sunshine, and cod liver oil. The tonsils were not removed.

H. H. Age 3 years—male—patient of Dr. John Simpson. First seen in May, 1928. Was brought in on account of being cross and irritable. He was breast fed for one year; there were three other children in the family, healthy and well. The patient had never been ill, but had had a tonsillitis for about one month; complained of pain in the right leg and limped when walking. He would not eat. He could not sleep. He perspired profusely day and night. For three weeks before I saw him he had photophobia and would bury his head in the pillow when trying to sleep or when resting in bed. He was extremely irritable. Physical examination showed a rather thin boy, with some rachitic bone changes. His tonsils were red and moderately enlarged. There was a slight nasal discharge. There was present, especially on his hands and feet, a red eruption or erythmatous blush. His hands and feet were cold. His skin was dry and there was loss of tissue turgor. When his clothes were removed he began scratching himself. His weight was twenty-six pounds and seven ounces. Ten days after his first office visit there was marked peeling, especially over the hands and feet, suggesting the peeling present in scarlet fever; coincident with this peeling the hands and feet became red and inflamed, somewhat like raw beef described in the literature. His urine examination was negative. Blood: hemoglobin 65, reds 4,160,000; whites 9,600. He was given daily actinic ray treatments for eighteen days, then every third or fourth day for a month longer. His diet included fresh vegetables, fruits, raw milk. He was given cod liver oil, alternating with saccharated oxide of iron. He improved rather rapidly. His appetite improved. The profuse perspiration ceased. The photophobia disappeared. His gain in weight was rather slow. From twenty-six pounds and seven ounces in May to twenty-nine pounds in August. At present he is well and happy. He has not been ill since, except for an attack of measles from which he recovered without complications. His tonsils have not been removed. He is now five years old. His height and weight are normal for his age.

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STURDY MRS. DOOLAN

The Phrenologist: "Yes, sir, by feeling the bumps on your head I can tell exactly what sort of man you are."

Mr. Doolan: "Oi belave it will give ye more ov an oidea wot sort ov a woman me woife is."

"My little boy is ill, doctor. Can you come at once?"

"Sorry, but I shan't be able to get around under an hour."

"For heaven's sake, do! It may be a case of life or death."

"Why, is it as bad as all that?"

"Not yet. But my wife's got ideas of her own on what to do if I shouldn't find you in, and I am afraid she'll do it."

MEDICAL SCIENCE AN ADJUNCT TO COMMERCIAL ADVANCEMENT*

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When we consider the advancement and prosperous condition of a country, it is noted the progress goes equally with the development along medical and hygenic lines. Where we find backward civilization and no financial resources, we also find no advance being made in health protective measures.

We were fortunate, in the early history of our country in having men at the head of our government, who were capable administrators and were interested in directing the welfare of the people. We can also note the directing hand of some eminent physician taking an active interest in the public welfare of the country. We can always point with pride to the work of Dr. Benjamin Rush, as one of the first pioneers, and a capable and efficient government official, but always retaining his identity with the medical fraternity. We might refer to Oliver Wendell Holmes, as one of the pioneers who sounded the alarm, in the fight against the microbe. The list is entirely too long to consider personal mention of all.

We have often profited by the mistakes of other countries and the investigators work of other nations. We were late in beginning the study and teaching of Pathology and Bacteriology. It was only in the latter part of the nineteenth century that the study and teaching of these subjects became general in the colleges of the United States. Research work was practically unknown, among our teaching staffs. It was the general teaching of these subjects that added an incentative to research work. The accomplishments of men in foreign fields, such as the work of Koch in the discovery of the *comma bacilli* as the cause of cholera. Pasteur's work on rabies, Eberth in the discovery of the *bacillis typhosis,* Kitasato's finding the *bacilli pestis,* Klebs, Loeffler, of diphtheria.

The work of the medical men in foreign fields was an incentative to many of our American students, and research workers to renew their efforts in determining the cause of the gastro-intestinal diseases which were having a high mortality rate and quarantining our ports and many places in the south. The high mortality rate and the extending of quarantine lines against yellow fever each year it seemed to reach just a little farther north and commerce was accordingly hindered just a little longer and a little more each season by this deadly peril which seemed to play no favorites—was equally as fatal to rich as the poor. Dr. Carlos Finlay of Havanna had advanced the theory the disease was mosquito borne, but he had not proven his theory. Sternberg who had been a close student of this disease since the Civil war time, gave the bacillus X as the cause, Sanarelli the *sanarelli bacillus B* as the cause with an immunizing serum. The serum was harmless and all recommended a trial. Past Assistant Surgeon Wasden, stated the disease was air borne.

They were all to some degree working along the proper lines, but none had advanced a definite plan or treatment. They were pioneers in medical research work. They were all untiring students, and were using every effort to find and eliminate the cause of this dreaded disease.

War was declared with Spain, about this time, General Sternberg was Surgeon General, and no one realized any more than he, the danger of the soldier falling victims of disease was by far greater than that of Spanish bullets. His previous research work on tropical diseases had given him a knowledge what to expect.

The French had carried on a war in Madagascar, some years previous to the Spanish-American war, with disastrous results from a health standpoint, and they predicted the same results for the Americans in Cuba, Porto Rico and the Philippine campaigns. They stated Madagascar was about the same latitude south as Cuba and the Philippines was north. All were tropical climates with dense growth of foliage, heavy rainfall in both places and the prevailing diseases were quite similar, yellow fever, typhoid and the various forms of malaria and dysentery. Soldiers from the temperate north would be unable to stand the rigors of the wet tropical climate, and would readily fall victims of disease, the same as the French in the Madagascar campaign.

This might have proven true were it not for the fact the Americans started their campaign with a rush, and did not stop until success had been attained. Had we met a well prepared nation, with the small preparation we had made, the story might have been different. Had Spain been as well prepared as the central powers of Europe were, at the breaking out of the World's War, we with our limited equipment and small preparation, might have met with the same disaster the French did in their Madagascar campaign.

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*President's address, delivered before the Third Councilor District Medical Society meeting, November 20, 1929.

Our War Office, in the beginning started to enlist all the immunes that were possible to obtain. Several of the southern states organized immune regiments, enlisting especially all that could be obtained who had previously had yellow fever, which was the most dreaded of all tropical diseases at that time. With the early beginning of hostilities, the War Department found it useless to try to conduct a campaign with immune soldiers, as there was too many other disadvantages, to be overcome. Within a very short time no attention was given to immunity, in the enlistment of soldiers. The effort was to get able-bodied men in the field as soon as possible, regardless of immunity. No serious thought was given to the selection of camp sites. The main idea was to get them as nearly located to places suitable for embarkation as possible. The locations were selected from the War Office with little or no regard for sanitation or drainage. The site were located, surveyed and laid out by the army engineers, many no doubt without consulting the Medical Department. The unsanitary location of many of the camps was the cause of the ravages of disease. No attention was paid to the protests from the Medical Department until some of the camps were virtual pest holes, with a large part of the command on the sick report.

The unfortunate condition in our Army camps, was in no way chargeable to the Medical Department, but rather through a lack of authority of that department, they being subject to the orders of the commanding officers, having no separate unit in the organization at that time. As stated previously the camp sites and sanitation was looked after by other officers who had no training in camp sanitation. When conditions became almost intolerable, line officers threw up their hands and came to the Medical officers asking them to help them out of their dilemma. This immediately brought about a change in camp sites and arrangements in regard to sanitary measures. The company latrine was moved away from the kitchen, and preventative measures were established which assisted materially in the health situation in the various camps.

The country was fortunate in having a great pathologist and bacteriologist, also an untiring worker at the head of the medical department in General George M. Sternberg, whose idea was to eliminate disease by prevention, lessons learned by mistakes to be used to advantage. It was through the efforts of General Sternberg the yellow fever commission was named, and not until such valuable men as Dr. Clendenning and several others had paid the price with their lives.

The commission was composed of Major Reed, Carroll, Lazear and Agrimonte, the latter being an immune having previously had yellow fever. We are all somewhat familiar with the work of this commission. Lazear made the supreme sacrifice in advancing medical science, and benefiting humanity, by experimenting on himself as to the methods of carrying infection from the mosquito to the human. The yellow fever hospital has his name on the honor roll. And he should ever be remembered by the world as a medical officer who sacrificed his life for humanity's sake. Majors Reed and Carroll lived but a short time after their work was completed. The exposure and labor in connection with this great commission had much to do with shortening their time in this world. The extreme nervous strain, in dealing with the subjects who volunteered their bodies and some their lives that this great experiment might be proved to the world beyond a doubt. They felt their responsibility and this no doubt had much to do with undermining their health, for these experiments were not conducted upon animals, but on human beings who had the nerve to practically volunteer their lives in order to determine some method whereby this dread malady might be conquered. The work of this commission was proved beyond the shadow of a doubt. Their work stands out today as one of the greatest accomplishments that was ever attained by the medical profession, wherein the greatest number of people were directly benefited.

Was this great commission ever properly rewarded or even recognized, as it so justly deserves to be, by the world? I fear it was like all great works of this character, it was soon forgotten, and but few remember the incident at all. This being a military commission, all the members should have been granted the highest rank attainable in their department. This would have been but small recognition for the great service they did for mankind. Not even this small recognition was granted them. And the men who volunteered the use of their lives in conducting this great experiment and demonstrating the success are unknown to the world today.

Major Reed, I think, gained but little advance in the files of his rank. Carroll was struggling hard to support his family, not even owning his home, in failing health, as a result of his labors in the tropics. We can all point with pride to the work of this great commission. But it is not with much pride we point to their treatment from our rich government.

The first real just recognition of the work of this great commission was led by the members of the Nebraska State Medical Association. It was the venerable (now deceased) von Mansfelde who made several trips to Washington, D. C. in quest of some recognition by congress. Results were anything but satisfactory. Through popular subscriptions from various state medical societies, funds were provided for the purchase of a modest home for Doctor Carroll. After his death a small pension was granted his widow.

The entire membership of this great commismission within a short time after their work was completed were called to their last rest. Years have lapsed since they passed away, their work is forgotten by the world they most benefited. Is it possible in our spirit of commercialization we are prone to forget, and pay no tribute to our greatest benefactors, even the ones who have profited the greatest commercially and financially. Why should we who are so thoughtful of others be so neglectful of our great benefactors?

Do other countries neglect these beautiful tributes? View if you please the fine statue of Dr. Carlos Finlay, erected to his memory, for the work he accomplished along the line of finding the cause of yellow fever. On one of the most beautiful and well kept plaza's in the city of Havana you will see a beautiful marble statue erected to the memory of this great medical research pioneer. Note if you please the recognition given Pasteur by his country. Koch has not been forgotten by his government. Banting and Best were generously rewarded and justly so by their government. The work of all these mentioned was highly creditable, and for the benefit of all mankind. The greatest credit must go to the commission who rendered the greatest service, to all the people and the commerce of the world. In this the great yellow fever commission stands the peer of all.

Thirty years ago the United States was classed by sanitarians in this manner: "The United States ranks high as an unsanitary country". Have we progressed during this time? Viewing health conditions we have made a wonderful progress. Typhoid has practically been eliminated; yellow fever is unknown within our borders; malaria only in isolated places. We are no longer an unsanitary country. We might casually ask: Who has been responsible for the change; to whom should the credit be given, for the changed condition? We can truthfully say the research workers in our honored profession should have this honor.

Does the commercial world realize the debt in dollars and cents it owes to the research workers mentioned in this paper? The position we now hold as regards our health and commercial success is entirely due to their work. Had it not been for them would we be able to visit the seaports of the world with impunity as we are now doing? Would we now have the Panama Canal? Would it not have been possible we would have floundered on the sand rocks France did under De Lessaps' leadership? We must all admit the Yellow Fever Commission paved the way for success in this great commercial venture. De Lessaps' failed on account of disease, the hidden enemy to mankind, with which he was unable to cope. Gorgas following the plan proven by the Yellow Fever Commission was able to cope and conquer that great unseen enemy to mankind, disease, and give to the commercial world the Panama Canal. Was this not a great triumph in medical advancement, which added untold millions to our national wealth?

Would we have the beautiful cities in the south we have at present? Would the magnificent cities of San Antonio, Dallas, Huston, New Orleans, Birmingham, Atlanta, Miami, and dozens of others be more than cross-road towns had it not been for the Yellow Fever Commission? Would Havana be the most beautiful city in the tropics, in fact now a close rival with our own capital city? Would it have been possible for any of this advancement if they were quarantined from the rest of the world, from three to five months each year as they were previous to the work of this commission. It is a matter of history, the south being quarantined each year, of yellow fever being found as far north as Baltimore, cholera in Philadelphia, and up the Mississippi as far as Davenport. Typhoid fever and malaria were the fall visitors to the rural population. We have emerged from an unsanitary country to a very sanitary one. Cities and villages have their water and sewerage systems affording them an ample supply of potable water, adding to their health and happiness. The rural communities have better protected water supplies, live in good homes and have about the same ideal surroundings as are found in our well regulated cities.

Noting the immense rapid development of our country since the advent of these health giving measures, we wonder if the people in general realize the credit for this in a large measure is due to the work of the medical profession? We are well aware that the ones who have sacrificed the most to attain the success of their theories, have profited the least. They have the satisfaction that they have rendered an invaluable service to the world. In our struggle in the great battle of life, with the noise of industry humming in our ears, we should give a moment's thought to the ones who have made our position in the world possible. We should be ever grateful to the scientific investigators, who are the pioneers in preventing disease and rendering life more tolerable, ever remembering the virtue in the thought "It is better to give than to receive".

SPINAL CURVATURES AND TREATMENT BY CORRECTIVE EXERCISES*

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In presenting this paper, I want to discuss, principally, those curvatures produced by faulty attitude in the growing child and young adult.

These are the deformities that can be treated by corrective exercises.

I would not advocate gymnastics alone, in the more advanced cases, but would use mechanical apparatus as well, such as orthopedic corsets and jackets. When a spinal deformity has advanced so there is destruction of the vertebrae caused either from rickets, tuberculosis, osteitis, arthritis deformans, etc., I would send them to the orthopedist, who makes a specialty of those cases.

But it is in the earlier cases when the parent comes to the general practitioner and says that he has noticed that the child (boy or girl) has a crooked back, that the deformity can be treated successfully by corrective exercises.

Spinal curvatures should be detected and treated early, because if neglected they so frequently leave unpleasant consequences for life.

The spine of the new-born babe is almost straight, but from the time the child begins to walk erect, curvatures in the direction forward and backward are normal and physiological, namely, a curvature with the convexity forward in the region of the neck, backward in the dorsal region, and forward in the lumbar region.

In weakness of the osseous system or weakened condition of the muscles of the back, an abnormal increase of one or several of these curvatures easily takes place. An increase of the curvature backward is termed round back, "kyphosis arcuata"; increase of the curvature forward is termed saddle back or "lordosis". Round back or kyphosis arcuata should not be mistaken for hump back, "Kyphosis angularis" or "spondylitis" which always results from or is a consequence of a previous inflammation in the spine and should not be treated by gymnastics, except as an after treatment for paralyzed or weakened muscles.

Every permanent deviation to the side in the spine is called lateral curvature or "scoliosis" and is a form most commonly occurring of all deformities of the spine. There are several different forms of scoliosis, as the curvature may include only a few vertabrae or the spine in its entirety; and besides two or more curvatures can simultaneously be found in the same person. Scoliosis may be called cervical, dorsal, or lumbar scoliosis, depending upon which part of the back is bent. Scoliosis can further be right sided or left sided, according to the convexity of the lateral curvature. The lateral curvature of the spine is of so frequent occurrence that some have considered a slight lateral curvature to be physiological; this however, is not the case. Scoliosis can be divided from a symptomatological point of view into three degrees of development: the slightest forms of scoliosis can pass over into the most severe, but it is, however, in every case impossible to foretell if a scoliosis will be stationary in a certain stage or if it will further develop itself. A scoliosis of the first degree can be difficult to detect, as no fully clear curvature of the spine itself can be observed; the line that unites the spinal processes being quite straight, but the existence of the scoliosis is then characterized even if very slightly, by a forward arching or bulging out of the lateral contour in the region of the chest, and a scoliotic bodily bearing is noticed; this, however, disappears, in stretched standing or in lying position; pressure on the convexity of the curvature can also bring the spine back to a straight position.

Generally the primary scoliosis appears as right-convex dorsal scoliosis, or as left convex-lumbar scoliosis, but the opposite conditions can also exist, although more seldom.

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*Read before the Seventh Councilor District Medical Society meeting at Crete, October 24, 1929.

A scoliosis of the second degree arises in this manner: that to the primary curvature after a time another unites itself, a secondary or so-called anti-curvature; the scoliosis has become S-formed.

A scoliosis of the second degree does not quite disappear in taking certain positions as stretching or by pressure on the convexity of the curvature, but is diminished in taking certain positions, and can be treated successfully by gymnastics, as the spine is still mobile.

The horizontal rotation of the vertebrae that the spinal column undergoes is also characteristic of this stage. It is only in the so-called first and second degree scoliosis that we can treat it successfully by corrective exercises, when the curvature has advanced to third degree or the formation of several deformities of the spine and when a pathological change in the vertebrae has taken place then I would not treat the deformity with gymnastics but advise them to consult the orthopedic surgeon.

I want to give briefly a few general exercises that can be given at home under the direction of the physician or in his office; namely:

1. Standing Double Arm Heaving: It is done with the patient standing erect as in military fashion. The arms well stretched are carried forward, upward, with hands separated from each other while the palms of the hands are turned towards each other, when the arms are fully stretched upward they are carried straight out and downward in which the palms are turned upward until the hands come into a horizontal plane when they are twisted so that the palms are turned downward, this movement is an excellent respiratory movement and should be done very slowly; a deep inspiration is taken during the heaving and a deep expiration when hands are lowered.

2. Stretched Standing: With arms straight, stretched above head, gradually bending the spine, forward and backward, also sideways. Each one of these movements is done five to eight times.

3. Have Patient Place Hands On Hips: And a torsion or twisting movement is gone through with, slow and even, from side to side, from five to six times.

4. Hands On Hips: Then trunk flexion backwards, also trunk flexion forwards, each six to eight times.

5. Head Flexion Forward and Backward: Head rolling, head bending from side to side, and head twisting; these movements should be gone through with slowly so as not to cause giddiness.

6. Horizontal Balance: Let patient stand on one foot, the other leg straight back, hands stretched above head, alternate and stand on other foot.

7. Body Rolling or Circling: Three to eight times, each way, with hands on hips and feet apart, bend the trunk forward then to the left side then backward, then to the right and forward, repeat to the right.

8. Place Patient On Couch or Floor: With face down and hands on hips, then trunk raised backward. This is a very good movement for double curvature of the spine, as all the muscles of the back, hip joint extensors and abductors of the scapulae are vigorously contracted; it is also very effective for round shoulders and narrow chest.

9. Patient Lying On Back: First, pull both knees up toward the chest as high as possible, then straighten the legs up and lower them slowly to forty-five degrees, when they should be bent with the feet resting on the couch. This will prevent the excessive lumbar anterior curve, and should be given frequently in cases of lordosis.

All these different movements should be given slowly and evenly with deep breathing; when all these movements have been gone through with, a deep breathing exercise should be given.

In conclusion, I would urge that every school physician should examine the back of every child as well as the tonsils, and if any deformity of the back is found he should advise him to go to the family physician and be treated, because it is in the early recognition of these cases and treatment that they can perhaps be prevented from more serious results.

ANOTHER SCOTCH ONE

Pat was arrested for being intoxicated. On being brought before the judge he was asked by the court what he was there for.

Pat: "Your Honor, I was arrested for being intoxicated."

Judge: "Pat, where did you buy the liquor?"

Pat: "Your Honor, I did not buy it. A Scotchman gave it to me."

Judge: "Thirty days for perjury."

SKIN GRAFTING BY IMPLANTATION*

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The subject of skin grafting is an old one but one which is of considerable importance to every physician. Everyone knows that raw surfaces should be covered as early as possible with normal epithelium to permit healing and prevent impairment of function.

There are three types of grafts:

1. Thin grafts represented by Reverdin Grafts, described by Reverdin in 1869; Ollier-Thiersch Grafts, described by Ollier in 1872 and Thiersch in 1886.
II. Free full thickness grafts without subcutaneous tissue or pedicle—Wolfe-Krause Grafts.
III. Pedicle grafts first described in 1854 by Dr. Frank Hamilton.

The indications for each type are dependent on the surface to be covered and the presence or absence of infection. Granulating surfaces are best covered with thin grafts. Fresh raw surfaces with free full thickness grafts if sufficient subcutaneous tissue is present on the raw surface—this in fresh wounds eight to twenty-four hours old or after excision of scar tissue. If bones, joints, tendons, large nerves or blood vessels are exposed in the wound and covering of both epithelium and subcutaneous tissue is desirable, this may be secured by the use of a pedicle flap.

In any type of skin grafting, cleanliness, asepsis, maintenance of pressure over the grafts and conservation of the blood supply are factors essential to success.

I wish particularly to discuss thin grafts, describing a new method of grafting. In dealing with defects covered with granulations it is a decided advantage to graft early. Almost invariably there is a stimulation from the wound edge following the applications of grafts and successive grafting causes successive stimulations. There is frequently very marked shrinkage in the size of the wound after successful grafting.

As one of the necessary requirements is healthy granulations and absence of infection there must be much delay.

The original method described for Thiersch grafts with overlapping does not take into consideration proper drainage which is so essential in a contaminated wound. Also it has been taught that the primary dressing should not be changed before five to eight days have elapsed. Recently in an article by Rulison, (*S. G. O. Vol. XLV. Page* 708), he advises daily surgical dressings stating that complete success usually follows unremitting surgical cleanliness in the dressing of these contaminated wounds.

Daily dressings are advisable in-as-much as the wound in most instances is an exudative, contaminated one which may readily pass to a state of infection with consequent sacrifice of transplants.

Moreover, Blair, Kanavel and Koch state that accurately applied uniform pressure maintained for fourteen to sixteen days is the most important factor in the successful aftercare of skin grafts.

In the March, 1930, issue of *Surgery, Gynecology and Obstetrics,* Wangensteen of Minneapolis describes a method of skin grafting by implantation, first described by Wilhelm Braun of Berlin in 1920.

The advantage of this method is that it can be employed in cases in which the commonly practised method of skin grafting would fail. The only condition necessary is that granulation tissue be present. It works well in the presence of infection and it is not necessary that granulations be healthy and no pressure is required. With this method then long delay in the preparation of the wound is avoided and early covering with epithelium accomplished. Moreover in certain regions of the body it is difficult and sometimes impossible to obtain accurate uniform pressure.

The absolute indications are those cases where other methods would fail as osteomyelitic cavities, chronic empyema cavities and decubitus ulcers.

Technique: The grafts are usually obtained from the anterior surface of the thigh in the same manner that Thiersch Grafts are secured. Infiltration of the surrounding skin with one per cent novocaine is the anesthetic of choice. With fine, sharp scissors the graft is cut into small pieces, two to four square millimeters in size. With an ordinary straight sewing needle grasped end on by a Kelly hemostat the grafts are impaled and obliquely buried into the granulating wound so that the grafts disappear. It does not seem to make any difference which side of the graft is uppermost. The grafts are placed one to one and a half centimeters apart. Thus with a small thin graft cut into the desired size a large surface can be covered. Both wounds are now covered with vaseline gauze dressing.

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*Read before the Omaha-Douglas County Medical Society, April 8, 1930.

In the subsequent dressings the wound can be freely irrigated without danger of detaching the grafts. This accomplishes two purposes; it keeps down unhealthy granulations and by the absence of infection stimulates healing. This method has the advantages of being simple, may be used in ambulatory cases and success is assured.

Two cases were shown; one an example of grafting by implantation, the other of pedicle grafting:

J. F., white, male, age 63, admitted to St. Joseph's hospital, February 19, 1930, with a large carbuncle on the back of the neck. This extended from the occipital protuberance to the seventh cervical vertebra and laterally across the neck. Long crucial incisions were made with dissection backward of the flaps. In spite of adequate surgical measures there was sloughing of the free edges of the flaps. This left a very large skin defect with an infected base. It would have taken a very long time to obtain clean healthy granulation. In addition it would be almost impossible to apply uniform constant pressure. With this in mind the area was grafted by implantation. In three weeks the entire wound was healed. There was marked shrinkage of the wound edges so that what at first seemed to be a large defect was reduced to a scar about one-half in size.

C. F., white, male, age 18, was admitted to St. Joseph's hospital, June 28, 1929. Immediately prior to entrance his right wrist caught in a newspaper printing press, destroying the skin on the flexor surface of the wrist, the annular ligament and all of the flexor tendons were severed and tattered. The radial artery was torn across and the median nerve severed. In addition there was a fracture of the lower end of the radius. Examination showed an ulnar and median nerve paralysis. However, the ulnar nerve had not been severed.

The wound was grossly infected and discolored with ink. The tendons were sutured, radial artery ligated, fracture reduced and a pedicle flap prepared in the right lumbar region. The distal end of the median nerve could not be found. In spite of active infection a very excellent result was obtained. The skin and subcutaneous defect, three by four inches, are covered with a smooth freely movable graft. The sutured tendons have all united and the radius is in good position.

There still remains a median nerve paralysis with some evidence of return of function. Regeneration depends upon the width of gap between the severed ends and the ability of the proximal end to grow into the distal. If in two months there is not definite return of function an attempt will be made to find the distal end of the median nerve so that it may be sutured to the proximal end.

CHRONIC ULCERATIVE COLITIS

M. H. Streicher and Bertha Kaplan, Chicago (*Journal A. M. A.*, Jan. 4, 1930), have carried on a careful survey in the past three years of all cases of diarrhea observed in a gastro-intestinal clinic, first, to confirm or refute the observations of Bargen and, secondly, to determine the specificity and therapeutic value of autogenous vaccine. About 1,200 proctoscopic examinations were made, of which only sixty-five conformed to a clinical and pathologic picture of a chronic ulcerative colitis. These sixty-five cases presented definite proctoscopic manifestations of an infectious process with ulcerations in various portions of the colon. Cultures were then obtained through the proctoscope by means of a sterile swab and transferred at once to a proper medium for incubation and subsequent culture and subculture. At the same time slides were prepared for Gram and acid-fast stains. Whenever necessary sterile saline washings were made from the ulcers for guinea-pig inoculation. Individual strains of bacteria were isolated from the cultures and a polyvalent vaccine was prepared. The autogenous vaccine was administered hypodermically to the patients in progressively increasing dosages in accordance with the severity of the infection. Most remarkable improvement was noted in about 80 per cent of the sixty-five cases observed. Fifty-two patients in this group were free from a *Streptococcus hemolyticus* strain. In five cases the symptoms persisted after vaccine therapy. The *Streptococcus hemolyticus* strain was present and remained present on reexamination with the proctoscope after injections of vaccine. In this group of five cases the ulcers of the colon did not heal readily and showed little indication of tissue reaction. Of three deaths, two followed surgical operations while the third was apparently due to exhaustion and repeated bleeding spells. In most cases of ulcerative colitis green-producing gram-positive diplococci are found predominating. Frequently these are in association with other bacterial flora. The green streptococci fall into five groups according to their production of acid in carbohydrate mediums. Other bacteria were also found, such as diphtheroid bacilli, *Staphylococcus albus* and *aureus, Staphylococcus albus-hemolyticus, Bacillus pyocyaneus, B. lactis-aerogenes* and *B. coli*. In the normal cases the authors were unable to isolate hemolytic streptococci. Occasionally, in addition to *B. coli,* they isolated green-producing gram positive diplococci similar to those of ulcerative colitis; also *Staphylococcus albus* and *aureus, Staphylococcus albus-hemolyticus, B. welchii* and diphtheroid bacilli. In three cases, spirilla pre-dominated in the smears. The green-producing gram-positive diplococci from all other conditions fall into five similar groups. Cases of ulcerative colitis which showed the predominance of spirilla in direct smears from the ulcers showed occasional green diplococci. Rabbits which were inoculated with hemolytic streptococci showed lesions similar to those produced by the green diplococci.

BONE-GRAFT OPERATION FOR TUBERCULOSIS OF SPINE

Fred H. Albee, New York (*Journal A. M. A.*, May 10, 1930), reviews and summarizes his experiences in the treatment of 856 cases. In only 6 per cent was the observation period less than one year; in 63 per cent it was from one to five years, and in 31 per cent it was from five to nineteen years. Preoperative complications were present in 286 cases (33 per cent). About half of these were abscesses or sinuses in various regions. In 32 per cent there were symptoms and signs of pressure on the cord, which had usually progressed to paraplegia or other forms of paralysis. Tuberculosis of the lungs or of other joints was present in 16 per cent. In one case a spinal graft, inlaid by another surgeon, had fractured. In 90 per cent of the cases the result was classified as excellent or good. In many of these the patient told of doing such hard work as heavy lifting and scrubbing, or of indulging in riding, tennis and swimming. In a few there were mild complaints of fatigue after the day's work or of occasional distress in the back. In the cases classed as good, there was still some mild reminder of the disease but there was no note-worthy incapacity. In the cases in which the patient was as strong and active as if he had never been ill, the result was classed as excellent. In sixty-nine cases, 8 per cent, the result was classed as fair, since the patient complained of moderate pain at times or was not able to do more than light work or indulge in active exercises without restrictions. Seventeen patients died, three of them during convalescence. Four of the seventeen deaths occurred in the complicated cases. The percentage of excellent or good results, 89, shows that, although the presence of complications naturally militates against the success of the operation, one may still hope for cure in a large majority even of these serious cases.

THE SALICYLATES

Charles C. Johnson, San Francisco (*Journal A. M. A.*, March 15, 1930), asserts that the readily absorbable salicylates, namely, the sodium and ammonium salicylates and acetylsalicylic acid, in doses equivalent to the full therapeutic dose, administered gastrically and hypodermically, caused a definite and generally marked respiratory stimulation with depletion of the alkali reserve of the blood in rabbits and cats. The *p*H (hydrogen ion concentration) remained unchanged, and acetone in the urine was not demonstrable. These changes were best reconciled as the equivalent of a fixed acid acidosis, compensated by loss of carbon dioxide. Definite increases in blood lactate were correlated with significant decreases in alkali reserve and respiratory stimulation in one half, or four, of eight cats receiving sodium salicylate in doses equivalet to the full therapeutic; the remaining four cats did not show evidences of acidosis, but in view of the respiratory and blood changes which occurred, there was still a correlation between these functions. Various possibilities regarding the origin of the increases in the fixed acid occurring in salicyl medication are indicated, but this phase of the question requires further investigation. Consequently, the use of bicarbonate together with salicylates in full therapeutic doses in rheumatic fever and also in the treatment of salicyl poisoning is rational on experimental grounds at least. No demonstrable effects were produced by methyl salicylate, because it is not readily absorbed, and were produced by methyl salicylate, because it is not readily absorbed, and by cinchophen, thus pointing to a peculiarity of the salicylates in causing acidosis.

STREPTOCOCCI FROM SCARLET FEVER, ERYSIPELAS AND SEPTIC SORE THROAT

Ruth Tunnicliff, Chicago (*Journal A. M. A.*, April 19, 1930), asserts that hemolytic streptococci from typical cases of erysipelas produce a bright green on chocolate agar after from twenty-four to forty-eight hours' growth, while those from scarlet fever cause no change or occasionally a slight greening of the medium after several days' growth. Immunologically (opsonic method), hemolytic streptococci from septic sore throat belong to neither the scarlet fever nor the erysipelas groups. They differ from scarlet fever streptococci by causing chocolate agar to become green. On chocolate agar, typical colonies of streptococci from scarlet fever are slightly granular and conical, and from erysipelas smooth and convex, while those from septic sore throat are very rough, indented, conical or convex, and gun metal in color, with occasional blister-like tops.

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MEDICAL ASSOCIATION WEEK AT DETROIT

Detroit, hub of the automobile business of the world, youngest of the new million population cities, was host the last week of June to various special medical organizations and to the 81st Annual Meeting of the American Medical Association. Together the activities made a full week of scientific work and of social activities and sightseeing.

Over five thousand physicians registered at A. M. A., headquarters, which must mean that, including the ladies, at least 7,500 persons interested in the medical profession were entertained in Detroit during the week.

All of the actiivties of the A. M. A., were held in Masonic Temple, a beautiful massive structure, spacious in its interior appointments, a veritable mystic maze to visitors because of its basement and sub-basements, its three or four mezzanines, its consistory chapel, cathedral, its main auditorium and ballrooms, etc.

Monday and Tuesday were given over to clinical lectures by such authorities as Rowntree, Ober, De Lee, de Takats and others equally renowned.

At the opening session, Tuesday evening, Dr. William Gerry Morgan, Washington, D. C., was inaugurated president. He chose for his discussion the subject of paternalism as applied to medical service and gave a keen analysis of the subject of state medicine and its related semi-paternalistic governmental regulatory acts.

At this meeting gold medals were awarded to the 18 living former presidents for their outstanding work in the field of scientific medicine. Those who received the honors are:

Dr. William Keen of Philadelphia; Dr. William H. Welch of Baltimore; Dr. Rupert Blue of Paris, France; Dr. Arthur Dean Beven of Chicago; Dr. W. C. Braisted of West Chester, Pa.; Dr. Ray Lyman Wilbur of Washington; Dr. Frank Billings of Chicago; Drs. William J. and Charles H. Mayo of Rochester, Minn.; Dr. George E. DeSchweinitz of Philadelphia; Dr. Alexander Lambert of New York; Dr. Hubert Work of Denver; Dr. William Allen Pusey of Chicago; Dr. William D. Haggard of Nashville, Tenn.; Dr. Wendell Christopher Phillips of New York; Dr. Jabez North Jackson of Kansas City, Mo.; Dr. William Sydney Thayer of Baltimore, and Dr. Malcolm L. Harris of Chicago.

Dr. Edward B. Heckel of Pittsburgh, chairman board of trustees, made the presentations.

The House of Delegates spent a busy four days on various important matters which will be presented later in a separate article.

The Scientific Sessions were divided into 15 sections, which met in alternate half day sessions. For the most part all the sections were attended by large groups and some sections were always crowded to capacity.

Notable among the scientific exhibits were the demonstrations on fractures and the cancer exhibit. Both the scientific and the commercial exhibits run into the hundreds.

Foreign guests on the program were Dr. E. H. Zweiffel, Munich; Dr. Felix von Mikulitz-Radicki, Berlin; Dr. Z. Bercowitz, Andong, Chosen, (Korea); Dr. Edward Mellanby, Sheffield, England; Drs. George R. Brow, C. N. Long and John Beattie, Montreal; Dr. Arthur Binz, Berlin.

The President's Reception and Ball, held at the Statler hotel, was the crowning social event of the meeting and was attended by more than 3,000 people.

Dr. Edward Starr Judd, Rochester, Minn., was elected president-elect and Philadelphia was designated as the next place of meeting.

EDWARD STARR JUDD

Edward Starr Judd, President-elect of the American Medical Association, surgeon of the Mayo Clinic, Rochester, Minn., was born in Rochester, July 11, 1878. He received his M. D. degree from the University of Minnesota Medical School in 1902. He married Helen Berkman of Rochester, Minn., Sept. 7, 1908. He is professor of surgery in the Post-Graduate Medical School of the University of Minnesota (Mayo Clinic), which position he has held since 1918, and is a surgeon on the staff of St. Mary's Hospital, Rochester, Minn. He is a member of many important societies and a past president of many medical organizations. He has been a frequent contributor to surgical technic and to the advancement of the art and practice of surgery and has written many articles on the surgery of the gallbladder for medical and surgical journals and for textbooks in this field. He has been secretary and chairman of the Section on Surgery of the American Medical Association and for many years was a member of the Council on Scientific Assembly.—*J. A. M. A.*

SUPREME COURT DECISION AIDS STATE INSTITUTIONS

The Supreme Court in deciding that the Governor had no right to veto part of the appropriation made by the legislature for state institutions has caused the release of about five hundred thousand dollars much needed. The University hospital will have available some forty thousand dollars for the completion of four wards in the new wing. The Norfolk State hospital will have its building fund increased materially, as will other institutions.

The medical profession, knowing the needs of the state institutions will rejoice in this decision. Expansion is needed in all the institutions of the state to care for the growing needs. We must not lose sight of the fact that this is a growing state and that the complexities of modern life continually add greater number of unfortunates to our burden, for care.

THE AMERICAN MEDICAL EDITOR'S AND AUTHOR'S ASSOCIATION

The American Medical Editor's Association existed for a good many years and under such men as the late Henry O. Marcy was a potent force. Within recent years it became dormant and so remained for some time. Within the last three years it has been revived largely through the efforts of Dr. H. Lyons Hunt of New York city. The thought was developed that not only medical editors, but medical authors could benefit by such an organization and, therefore, the name and scope of the organization were widened to include medical authors. This organization held an all day meeting at the Book-Cadillac hotel in Detroit, June 25, at which many matters of interest to the profession and to editors and authors were discussed.

It is intended to limit the membership to members of the profession, editors and authors, whose work merits real consideration.

It was decided that to make the *Medical Mentor,* the official organ, what it should be, it would be well to increase the dues to $10.00 per year, which was done by unanimous vote.

Dr. H. Lyons Hunt was reelected president. Your editor was chosen one of the governors.

THE PASSING OF FOUR NOTED PERSONAGES IN AMERICAN MEDICINE

It is well to pause occasionally to take note of the lifework of American physicians who have left their impress on the generation. Within about two weeks four such have passed from us—Dr. Ralph Webster, Dr. Robert H. Babcock, Dr. Harvey W. Wiley, and Dr. Lulu Hunt Peters.

The report of the death of Dr. Ralph Webster of Chicago, well known to all Nebraska medical men who were trained at Ft. Riley during the World War, as well as those who heard him at a state medical meeting in Omaha a few years ago, will come as a distinct shock. Dr. Webster was clinical professor of medicine at Rush Medical College and was an author of text books on clinical diagnosis. During the war he produced a volume on Army Paper Work and another on Military Law, both of which were accepted by the regular army. He was one of the best loved of men. He died July 1st, at the age of fifty-seven years.

Dr. Robert H. Babcock, noted blind physician of Chicago, author of "Diseases of the Lungs", "Diseases of the Heart and Arterial System", "Your Heart and How to Take Care of It", formerly professor of clinical medicine, College of Physicians and Surgeons, Chicago; member of numerous foreign and American scientific bodies;

on the staffs of several Chicago hospitals, died June 28 at the age of seventy-eight years.

Dr. Harvey W. Wiley was chief chemist of the United States Department of Agriculture from 1883 to 1912; author of "Foods and Their Adulterations", "Principles and Practice of Agricultural Chemistry"; the father of the Food and Drug Act. He died June 30, aged eighty-five years.

Dr. Lulu Hunt Peters, Los Angeles and New York, noted physician and dietician, author of "Key to the Calories", etc., and regular contributor of syndicated articles to the press, died, at London shortly after arrival to attend the Royal Sanitary Institute, July 4, of pneumonia.

A NEW FEDERAL NARCOTIC LAW

A Narcotic bill introduced by Porter and amended to suit the organized medical profession was passed by the Congress and signed by the President in June. The law as enacted (*J. A. M. A.*, June 14, 1930), "creates a bureau of narcotics in the Treasury Department and provides for the correlation of its activities with those of the bureau of customs, the Public Health Service and the narcotic services of the several states. The Federal Narcotics Control Board is abolished. The functions of that board, which relate solely to the importation and exportation of opium and cocoa leaves and their derivatives, and the functions of the bureau of prohibition so far as they relate to the enforcement of the Harrison Narcotic Act, are transferred to the new bureau. The bureau of narcotics will be under the supervision and control of a commissioner of narcotics, appointed by the President."

"As it now stands, it is susceptible of use as an effective agent for the building up of powerful and well coordinated federal and state machinery for the supervision and control of narcotic drugs and narcotic addition. How far it will accomplish that result will depend on the wisdom of the President in the selection of the Commissioner of Narcotics and the wisdom of the Secretary of the Treasury in appointing a deputy commissioner. The medical profession is ready to do its part."

DUODENAL REFLUX FOLLOWING CHOLECYSTECTOMY

The factors involved in the normal transport of bile into the duodenum are not fully understood. Cholecystic and intraductal pressure as conditioned by the varying tonus of the so called sphincter of Oddi and by intraduodenal pressure are probably important considerations. In operations involving the biliary tract, it is not surprising, therefore, that it is impossible to accurately forecast the amount or duration of bile drainage that may take place. In those cases in which the common bile duct has been opened and drained, the drainage is apt, naturally, to be greater in amount and duration than in those cases in which the drainage is established through the gallbladder or cystic duct. Codman, Lincoln Davis, and Walters and Marshall have reported, in all, 10 cases in which regurgitation of duodenal content took place through a tube in the common bile duct. In the case to be reported below, the common bile duct had not been opened, all the drainage material had been removed and the bile drainage had ceased when a reflux of duodenal content took place 14 days post operative.

A female, aged 50, who had suffered several attacks of gallstone colic, without jaundice, underwent cholecystectomy 5/8/30. The gallbladder and cystic duct were packed with small stones. There were none in the hepatic or common ducts. The cystic duct was split to remove imbedded stones and over the open duct a No. 18 French soft rubber catheter was snuggly fitted and held in position by a silk suture brought out through its lumen. Two Penrose drains were also inserted. These were removed the 3rd P. O. D.

On the 6th P. O. D. the catheter was removed. Gradually decreasing bile drainage occurred until the 14th P. O. D., when it ceased entirely and the patient was allowed out of bed. Two days later while sitting in a chair the patient complained of severe pain in the upper abdomen and was nauseated. When placed in bed, there immediately occurred a large amount of thin, flocculent, slightly bile stained fluid which saturated the dressings and patient's clothing. Within a few hours there was complaint of skin irritation which the next morning was red, excoriated and digested. For 2 days following the thin drainage, the stools were clay colored. They were not tested for bile. The drainage which excoriated the skin was not tested for digestive ferments. In three days all drainage had ceased. The redness and excoriation of the skin disappeared within a week and the patient has remained well except for an acute respiratory infection.

It is not difficult to conceive of duodenal regurgitation taking place in cases in which the common duct has been drained, the tube sometimes extending well down toward the ampulla and the duct having been probed into the duodenum. In this case, however, the common duct had not been opened directly, all drainage material had been removed and all drainage had ceased two days before the reflux took place. While no tests were made for digestive ferments it seems there could be no doubt of their presence.

In some cases, as is known, the pancreatic duct opens well up on the ampulla and the question arises if this were not pancreatic secretion rather than duodenal content that was forced out. The quantity of drainage argues against this. The clay colored stools suggest that bile did not reach the gut for 2 or 3 days.

It seems reasonable to assume that some circumstance which increased the intraduodenal content into the common duct and out through the nearly closed sinus. Possibly duodenal obstruction from a mesenteric pull is an explanation. McArthur and others have shown that barium can be forced through the papilla into the common duct.

—J. W. Duncan, Omaha.

ANOTHER PHYSICIAN COMPLETES FIFTY YEARS OF PRACTICE—DR. M. L. HILDRETH

It is with a feeling of considerable enthusiasm that we record cases of Nebraska physicians in practice fifty years. Fifty years of practice is a long span; but think what the last fifty years have meant in medical progress and to have lived and been a part of the transition and practiced in the daily grind during these eventful fifty years is a glorious achievement.

M. L. HILDRETH, M. D.

Dr. M. L. Hildreth was born at Lee, Mass., January 9, 1850, attended public and private schools, came west in 1874 and engaged in farm work for three years, studied medicine under a preceptor one year and attended Rush Medical College, three years, graduating in 1880. He was located at Tekamah for the first year, then located at Lyons, his present location, coincident with the completion of the railroad. In 1885 he moved to Sioux City to accept the chair of practice of medicine in the Sioux City College of Medicine, but returned to Lyons at the end of the second school year. He was secretary of the Nebraska State Medical Society from 1889-92, president, 1892-93, member House of Delegates, A. M. A., Baltimore meeting, 1895; president Nebraska Railway Surgeons Society, 1887; Nebraska delegate to Pan-American Medical Congress, Washington, 1893. Dr. Hildreth was active for many years in the civic affairs of the community.

The Burt County Medical Society sponsored a celebration in honor of the completion of fifty years of practice of Doctor Hildreth at the Lyons park, Sunday, June 22, 1930, over a fried chicken dinner. Physicians from other near-by counties were present as was also Dr. K. S. J. Hohlen, Lincoln, president, Nebraska State Medical Association. A gold watch with the legend 1880-1930 engraved thereon was presented to the Doctor, a number of speeches were made and congratulatory letters read and an able response was made by Doctor Hildreth.

Doctor Hildreth, eighty years of age, is still spry and able to practice his profession and does so, but is not actively out for business.

Dr. and Mrs. Hildreth have two daughters and a son.

Dear Reader:

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EDITORIAL PARAGRAPHS FROM THE DETROIT MEETING

Forty State Boards now accept National Board Certificates for licensure.

Masson said the general practitioner is just as necessary in the general scheme as he ever was.

The correlation of mind and matter was presented in three papers and the discussions thereto.

After attending the Detroit meeting the editor is prouder of the Nebraska profession than ever before.

Greenfield Village is a thing of beauty and a joy to those who visit its quaint old buildings, relics of other days.

In a series of 200 cases of asthma studied it was found that 80% depend on sinus disease alone for their origin.

She who knows says there was very little actual evidence of smoking among the auxiliary and medical women in attendance.

Derby of Boston believes, in spite of general belief to the contrary, that phlyctenuar disease is in some way related to tuberculosis.

Haggard stated that the occurrence of carcinoma of the gallbladder had been reduced from 4% to 1% by early removal of that viscus.

Rabinowitz stated that no organ in the body has the regenerative capacity possessed by the liver.

Dr. Rachel Long, Holdrege, Nebr., was elected regional director of the Medical Women's Association at the Detroit meeting.

Morgan, Philadelphia, says we are wrong when we refer to "country doctor"; he is the doctor in the country and the equal of any, anywhere.

Rabinowitz, of Brooklyn, called attention to atrophy of the liver due to cinchophen preparations and cited fifty cases of cinchophen poisoning.

"If we cannot agree on medical matters that have a scientific basis how can we ever agree on matters of religion?" said a bystander in a group conversation.

John B. Deaver, in a masterful paper on gallbladder infection, in an enthusiastic moment said, "The longer I practice surgery the more faith I have in the art."

Met our former Dr. M. G. Wohl and his wife, Dr. Reisa B. Wohl, now of Philadelphia, where he is connected with Temple University and is doing clinical medicine.

Shipley of Baltimore advocated Tribromethanol in anaesthesia. The mortality in a large series was .2%. One hundred mm in solution of acacia is the average dose.

The secretary of the Detroit Chamber of Commerce admitted a depression existed in industries, but claimed that in spite of what was said conditions were about 85% normal.

O'Leary of Rochester, Minn., said Pompholyx is a neurogenic disease due to systemic exhaustion and cites an endemic in northwestern Iowa following numerous bank failures.

A medical officer in the cabinet was suggested, to which came as a rejoinder, why not have a preacher in the cabinet to represent religion or a lawyer to represent the legal profession?

Dean Lewis pointed out the difficulties in diagnosing bone sarcoma. Ossifying hematoma and myositis ossificans must be excluded—and the history will help in the differentiation.

Weston, chairman, Section Diseases of Children, declared our knowledge of foods is far from complete. A balanced diet is not a scientific reality. We do know that naturally ripened fruit has the greater vitamine content.

Brooke Bland spoke on vaginal trichomoniasis in pregnancy. Recent studies show that this is a frequent cause of troublesome vaginitis in pregnancy. Lugol's solution is the cure, but should not be used in pregnancy.

Crosby stated that every case of gas in the abdomen is not a gallbladder case as some are led to think. Also, unless the diet is properly regulated following a gallbladder operation, the result of the operation is not good.

Anderson, of Mississippi, said the medical economics problem must be met by greater volume rather than by increased fees: the open community hospital is needed as a means of bringing modern scientific medicine to the people.

Lahey stated that in gastric ulcer coming to surgery, exsection is the best procedure. Pyloric obstruction with ulcer is the only indication for gastroenterostomy. Selection of cases for operation requires the best surgical judgment.

Detroit and Ford are almost synonymous. When working to full capacity the Ford plant employs about 110,000 men and the output is between 9,000 and 10,000 cars per day. The Stout (Ford) Airways can make 3 airplanes a day.

Standing on the sidelines and surveying the surging groups of men and women one was impressed with the idea that the medical profession and their life partners as individuals, are of a pretty high type.. Where would you find a superior type?

Studies have shown that women of large families are not particularly prone to rheumatic heart disease. Women with rheumatic heart disease die, not because of pregnancy, but because of the natural evolution of the disease, stated Reid of Boston.

Dr. Olga Stastny, President, National Woman's Medical Association and one of our Nebraska own, was again acclaimed the most heroic woman doctor. Her presidential address dealing in part with sex education was well received by profession and press.

A discovery of revolutionary importance in medicine, a dye which upon injection into the veins make the kidneys opaque to the x-ray, was announced by Dr. Arthur Zinz, of Berlin. The substance is known as uroselectan and is not yet available in this country.

Rocky Mountain Spotted Fever occurs only in the Rocky Mountain region. It is unknown in any other part of the globe. A vaccine made from the insect—the particular tick—is the only vaccine so made for the prevention and treatment of the disease.

Britton, Chicago, said man's greatest efficiency begins at 35 and says American industry makes a serious mistake discharging men at 45. "From the ages of 45 to 55 a man delivers more in judgment, stability and loyalty, and in every virtue except muscular agility and sheer muscular power."

Met a Detroit M. D., who, as a medical officer in the World War, was a prisoner of the Germans for seven months and we got his reactions of life in German prisons. While he said it was not a pleasant experience, he also admitted it was not absolutely bad, and now that it is all over he would not take any price for the adventure.

Mellanby, of Sheffield, England, stated that oat meal as a diet is decalcifying; that because of the copper and manganese content, lettuce and carrots are superior to spinach in the infant's diet. Carrot top and beet top concentrate were recommended. Alfalfa leaf, his wife discovered, has 3 times the iron content that egg has, and contains the growth promoting vitamins.

Met Dr. J. M. Aulde of Philadelphia, a veteran physician and independent thinker. It was he who, a generation ago, introduced arsenite of copper as a remedy for intestinal antisepsis. He had the Fraser people make tablets containing 1/100 of a grain and one was dissolved in a wineglass of water and administered in teaspoonful doses every 15 minutes until relieved. For a time the remedy had a considerable run.

Baketel, *Medical Economics*, said preaching against fee splitting is a useless gesture, since it is too wide spread. A new system of physician-patient-specialist triangle must be devised in which the rights of all parties are conserved. Suggested a model form of invoice for billing patient which shall show the amount to go to each. Suggested that 15% of operating fee go to local physician. It is wrong to condemn fee-splitting and offer nothing else. To which we say "Amen".

A California surgeon friend says the Coffey-Humber treatment has merit, whether permanent or not. He cited instances of cases supposed to be hopeless, greatly relieved by the injections. One particularly: A surgeon friend's wife had a cancerous breast removed and after a time was found to have secondary involvement of the chest; fluid; had to be tapped weekly. As a last resort Dr. Humber was prevailed upon to give her injections at her home. No further drainage was needed and recently she was able to take a motor trip of several hundred miles with perfect comfort.

A Detroit physician reminded the editor that a Nebraskan, Dr. H. Winnett Orr, Lincoln, had given the Beaumont Lecture before the Wayne County (Detroit) Medical Society early in April, and he also said that the only other orthopedic surgeon previously so honored had been Dr. R. B. Osgood of Boston. This ought to mean something. The Beaumont Lecture is an endowed one and is published in book form. The title of Dr. Orr's lecture was, "A New Era in the Treatment of Osteomyelitis and Infected Wounds".

Dr. Palmer Findley was the only Nebraskan on the program. The title of his paper was "Pelvic Irradiation in the Child-bearing Woman". Radium and x-rays do not cause any ill-effects on subsequent off-spring when administered in the pre-conception period, but therapeutic applications of radium and x-rays on the pregnant uterus will cause anatomical defects in the growing fetus in 60% of the cases. The defects commonly found are blindness and microcephalic idiocy. So grave are the results as to justify the interruption of pregnancy where rays have been applied to an unrecognized pregnant uterus. Radium and x-rays may be applied to suspend temporarily the menstrual periods for uncontrollable bleeding and intolerable menstrual pains. Such a procedure is always an uncertainty and should not be attempted by a radiologist without consulting with a competent clinician. There is always a possibility of permanently suspending the menstrual periods.

Following is a list of Nebraska physicians, 51 in all, registered at Detroit meeting:

Bailey, B. F., Lincoln; Bantin, Elmer Wm., Omaha; Buckley, Fred W., Beatrice; Burrell, R. H., Creighton; Clarke, Floyd S., Omaha; Conlin, Frank M., Omaha; Colburn, William O., Lincoln; Dishong, G. W., Omaha; Henske, J. A., Omaha; Larsen, A. A., Gurley; Long, Rachel W., Holdrege; Manning, Ernest T., Omaha; Fouts, R. W., Omaha; Hays, Edward R., Falls City; Long, F. A., Madison; Misko, George H., Lincoln; Mitchell, A. R., Lincoln; Mitchell, Edwin J., Scottsbluff; Moody, W. B., Omaha; Orr, H. Winnett, Lincoln; Rogers, F. L., Lincoln; Russum, B. C., Omaha; Steenburg, E. A., Aurora; Thompson, Warren, Omaha; Traynor, Raymond L., Omaha; Tucker, James C., Beatrice; Bradley, E. B., Spencer; Findlay, Palmer, Omaha; Gerald, Herbert F., Omaha; Hamilton, Howard B., Omaha; Harvey, H. E., Fairbury; Kennedy, C. R., Omaha; Stastny, Olga, Omaha; MacQuiddy, E. L., Omaha; Warner, Ruth A., Lincoln; Wildhaber, Wm. T., Beatrice; Woodward, James M., Lincoln; Young, G. Alexander, Omaha; Zemer, S. G., Lincoln; Bennie, J. W., Clearwater; Davis, Herbert H., Omaha; Koebbe, E. E., Columbus; Kani, M. Alace Mantz, Omaha; Schrock, Robt. D., Omaha; Aswanson, Leonard, Hastings; Tomlinson, C. C., Omaha; Wherry, W. P., Omaha; Magill, J. L., Holdrege; Moon, Louis E., Omaha; Hustead, C. L., Falls City; Potts, John B., Omaha.

THIS MONTH IN MEDICAL HISTORY

August, 1930

1830, August 12, the first American railroad was built between Albany and Schenectady, New York.

1830, August 8, Dr. Cornelius Rea Agnew was born in New York. After a period of study in Europe he became, in 1858, Surgeon General of the State of New York. He was a Trustee of Columbia University School of Mines and in 1872 President of the State Medical Society of New York.

1854, August 2, an outbreak of Yellow Fever began in New Orleans in which there were 2,441 deaths before November of the same year.

Dr. Douglas Houghton, scientific explorer, for whom Houghton, Michigan, is named, was graduated in Medicine in 1830, and licensed to practice in Chautauqua County, New York. He was drowned in Lake Superior while a member of a surveying party in October, 1845.

In 1830 Dr. Horatio Gates Jameson read a paper on "The Non-contagiousness of Yellow Fever" at Hamburg, Germany. In 1835 he was President of the Ohio Medical College at Cincinnati.

Dr. Robert R. Livingston of Plattsmouth, Nebraska, was born in August, 1827. He came to Nebraska in 1857, organized Company A of the First Nebraska Regiment in July, 1861, and was one of the founders of the Nebraska State Medical Association and the Omaha Medical College.

Ephraim McDowell, the "Father of Ovariotomy" died in 1830 at the age of 59. He performed ovariotomy thirteen times before the days of asepsis and eight of his patients recovered.

August 14, 1907, Dr. Donald McCrae died in Council Bluffs, Iowa, at the age of 68. He was the Father of the Missouri Valley Medical Society and for many years a teacher in the Omaha Medical College.

In 1930 Dr. Thomas Mullen (1806-1873) and six others founded the Washington Medical Institute for the purpose of providing Medical Instruction in the District of Columbia.

NECROLOGY

James M. Patton: In the early hours of the morning of Friday, June 20, 1930, by the sudden death of Dr. James M. Patton, the medical profession of the state of Nebraska suffered the loss of one of its most prominent members. Dr. Patton was born in Mercersberg, Pennsylvania, on September 25, 1876. When he was six years of age his family moved to Pawnee City, Nebraska, and he received his education there until he attended Bellevue College and later the Omaha Medical College, now the Medical College of the University of Nebraska, from which he was graduated in 1904. Shortly after graduation he entered the office of Dr. Harold Gifford and became the senior member of the partnership after Dr. Gifford's death last November.

JAMES M. PATTON

Dr. Patton's interests aside from medicine were chiefly in his religious and church work and effort for civic betterment. He was for many years superintendent of the Sunday school of the Lowe Avenue Presbyterian church where he served also first as deacon and later as elder which position he held at the time of his death. Busy as he was he always had time to direct the drives for the medical portion of the Community Chest and any worthy effort for civic advancement found in him not only an active supporter but also a ready and generous contributor. Always interested in his undergraduate college he was for many years of member of the board of trustees of Bellevue College and at the time of his death was vice chairman of the board. He was also a member of the board of the Presbyterian Theological Seminary of Omaha.

In his scientific life Dr. Patton was preeminent. A tireless worker with his patients, who were many, he nevertheless found time to contribute to his branch of the science, Ophthalmology, and a rapid search reveals thirty-nine articles on various subjects which he contributed to the literature. These efforts brought him both local and national recognition. He was professor of Ophthalmology at his alma mater, the University of Nebraska, and Ophthalmologist to the Nebraska Methodist, Bishop Clarkson Memorial and Douglas County Hospitals. In 1921 he was president of the Omaha-Douglas County Medical Society and this office he filled with distinction. He was elected a member of the American Academy of Ophthalmology and Oto-Laryngology and the crowning recognition came to him only this year when he received the honor of being elected to membership in the American Ophthalmological Society.

On the rare occasions when Dr. Patton took a vacation from his practice it was nearly always to pursue some further study or attend some medical meeting. He had studied in London, Vienna and other foreign centres. At the time of the Great War he enlisted in the Medical Corps of the Army and was commissioned a captain. He served overseas with Base Hospital 49 and later in the Hospital Centre at Vitel, gaining promotion to the field officer rank of major.

On August 16, 1904, Dr. Patton married Miss Agnes Hatfield of Pawnee City who attended Bellevue College as a fellow student. Mrs. Patton and one son, John, who was graduated from Blair Academy at Blairstown, New Jersey, this month, survive him. He is also survived by two brothers, William and Irving, and a sister, Mary.

At the time of his death Dr. Patton was apparently at the height of his efficiency. A few months ago he had been sick a few days in the Methodist Hospital with a bad cold but had apparently recovered. The day before his death he had put in a full day at his office and in the evening had gone to the Douglas County Hospital. About midnight he was striken with an attack of angina pectoris and died in less than two hours. With his passing the medical profession has lost a true friend whose physical absence will be felt for years to come but whose life of devotion to his profession will serve as an inspiration to generations of medical men who will follow.

Human life sails on like a great ship except that in the end of every life there is a wreck. It may be that the wreck is late when the bodily and mental machinery has worn out and the battered hulk disintegrates or it may be that it comes when the ship under full sail glittering in the sunlight strikes a hidden rock and in the twinkling of an eye sinks beneath the waves and is gone. But to one who has seen the majestic ship in all its beauty sailing to its sudden end the mental picture of that majesty remains. So with Dr. Patton. Though the sense of loss is keen and one wonders at the reason, there is the memory left and somehow the feeling that Dr. Patton died as he would have wished—in the harness.

—Alfred Brown.

Ole Grothan, St. Paul, Nebr.; Kentucky School of Medicine, 1886; Rush Medical College, 1894; a practitioner at St. Paul since graduation with the exception of several years in practice at Kearney where he conducted a hospital about thirty years ago; a pioneer surgeon of more than local renown; a member of the Nebraska State Senate, 1896; in the medical corps of the army during the Spanish-American War, serving in Cuba; surgeon-general Spanish-American War Veterans at time of death; member, Nebraska State Medical Association and sometime a vice president; died June 19, 1930, in an Omaha hospital, ten days after an operation for calculus, aged about seventy-one years.

Dr. Grothan was born in Norway, came to Howard county, Nebraska, at an early age, studied medicine and spent almost his entire life in the same county.

Ernest O. Weber, Wahoo, Nebr.; Rush Medical College, 1902; veteran of the Spanish-American war and major medical corps World War; a district commander of the American Legion; an influential man in the affairs of his community; an active member of the Nebraska State Medical Association; died three days after an apoplectic attack, July 10, 1930, aged fifty-six years.

J. Harvey Mettlen, Bloomfield, Nebr.; State University of Iowa College of Medicine, 1897; grand commander of the Knights Templar of Nebraska; in the medical corps during the World War; practitioner at Bloomfield upward of thirty years; member, Nebraska State Medical Association; a man of parts interested in the civic affairs of the community; died July 10, 1930, of apoplexy, aged sixty-one years. A widow and a daughter survive.

Libbie L. Miller, Omaha; retired; Omaha Medical College, 1898; a practitioner in Omaha for twenty years; formerly a newspapers editor at Tekamah; died of some brain malady, July 8, 1930, aged sixty-nine years.

J. F. Zediker, Orting, Wash.; retired; educational record not available; an early day practitioner in Franklin county, Nebraska; clerk of the Nebraska legislature from 1873 to 1885 and again in 1895; member of the constitutional convention in 1875; veteran of the Civil war, captain of the Twelfth Iowa infantry; resident of state of Washington since 1893 where he built up a large practice from which he retired about ten years ago to take up religious work; died July 2, 1930, aged about eighty-eight years.

E. T. Cassel, South Gate, Calif.; Glasgow University, 1867; an early day practitioner at Hastings, Edgar and Ashland; a resident of Nebraska forty-one years; later a minister in the Baptist Church serving charges at Fort Morgan and Denver; a writer of hymns, notable among which are "The King's Business" and "Loyalty to Christ", sung round the world; died about July 3, 1930, aged eighty-one years.

GRADUATES OF 1930, CREIGHTON UNIVERSITY SCHOOL OF MEDICINE, AND INTERNSHIPS

A. C. Armitage, St. Catherine's Hospital, Omaha.

Colbert, J. J., St. Margaret's Hospital, Kansas City, Kan.

Colby, F. C., Jennie Edmundson Hospital, Co. Bluffs, Ia.

Cowan, T. W., Queen's Hospital, Honolulu, Hawaii.

Courtney, J. E., St. Joseph's Hospital, Omaha.

Danicich, M. A., St. Vincent's Hospital, Portland, Oregon.

Drake, R. J., Swedish Hospital, Seattle, Wash.

Dowling, C. D., St. Joseph's Hospital, Omaha.

Dworak, A. F., St. Joseph's Hospital, Omaha.

Egan, T. J., Mercy Hospital, Co. Bluffs, Ia.

Farrell, C. H., St. Luke's Hospital, Denver, Colo.

Ferrari, R. J., Southern Pacific Hospital, San Francisco, Cal.

Floersch, E. B., St. Joseph's Hospital, Omaha.

Flynn, S. E., Santa Clara Hospital, Santa Clara, Cal.

Greteman, Lenora, Children's Hospital, San Francisco, Cal.

Guardino, S. A., Mary's Help, San Francisco, Cal.

Hinton, C. B., St. Luke's Hospital, Denver, Colo.

Hoffman, E. F., Los Angeles County, Los Angeles, Cal.

Hottinger, R. C., St. Joseph's Hospital, Kansas City, Mo.

Hughes, W. T., St. Catherine's Hospital, Omaha.

Lenahan, G. T., St. Mary's Hospital, San Francisco, Cal.

Leland, S., City and County Hospital, San Francisco, Cal.

Marxer, J. L., St. Vincent's Hospital, Portland, Oregon.

Murphy, J. H., Mercy Hospital, Des Moines, Ia.

McLaughlin, R. F., Latter Day Saints Hospital, Salt Lake City, Utah.

Meyer, W., St. Catherine's Hospital, Omaha, Nebr.

Musfeit, S., Bryan Memorial Hospital, Lincoln, Nebr.

Nolan, B. J., St. Joseph's Hospital, Omaha.

O'Grady, W. E., Southern Pacific Hospital, San Francisco, Cal.

O'Neil, J. F., St. Joseph's Hospital, Omaha.

O'Neil, F. H., Hollywood Hospital, Hollywood, Cal.
Pfaff, R. O., Mercy Hospital, Des Moines, Ia.
Pohl, L. K., St. Mary's Hospital, Kansas City, Mo.
Pratt, W. L., Ancker Hospital, St. Paul, Minn.
Raffington, D., St. Joseph's Hospital, Omaha.
Reichle, P., Los Angeles, County General, Los Angeles, Cal.
Shaughnessy, P., St. Alexis, Cleveland, Ohio.
Shepherd, L., St. Joseph's Hospital, Omaha, Nebr.
Splichal, W., St. Catherine's Hospital, Omaha, Nebr.
Starman, B., St. Mary's Hospital, Detroit, Mich.
Steeleo, W. O., San Diego County General Hospital, San Diego, Cal.
Sweeney, L. R., St. Vincent's Hospital, Portland, Oregon.
Teitler, M., Mary's Help Hospital, San Francisco, Cal.
Walsh, E., St. Joseph's Hospital, Omaha.
Yager, F. C., St. Elizabeth's, Youngstown, Ohio.
Kerr, W. H., St. Joseph's Hospital, Kansas City, Mo.

GRADUATES—UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE, AND INTERNSHIPS, JUNE 7th, 1930

Adams, Payson, Kings County Hospital, Brooklyn, New York.
Aiken, Samuel D., Methodist Hospital of Southern California, Los Angeles, Calif.
Alberts, Edward, Cincinnati General Hospital, Cincinnati, Ohio.
Baird, Joe W., Starling-Loving University of Ohio Hospital, Columbus, Ohio.
Beebe, DeWitt C., Charity Hospital, New Orleans, Louisiana.
Brewster, Frank W., Tacoma General Hospital, Tacoma, Washington.
Crook, Clarence E., Robert Packer Hospital, Sayre, Pennsylvania.
Donley, Robert R., University of St. Louis Hospital, St. Louis, Mo.
Dye, Harold B., Iowa Methodist Hospital, Des Moines, Iowa.
Ehlers, Orrin C., University Hospital, University of Nebraska, Omaha, Nebraska.
Elliott, Olin A., Iowa Methodist Hospital, Des Moines, Iowa.
Fawthrop, Dorothy J., (Not interning) Address, Red Cloud, Nebraska.
Forcade, W. Porter, California Lutheran Hospital, Los Angeles, California.
Garrison, Mahlon W., St. Elizabeth Hospital, Lincoln, Nebraska.
Gentry, William J., Covenant Hospital, Omaha, Nebraska.
Hahn, William, Immanuel Hospital, Omaha, Nebraska.
Hanchett, Leland J., U. S. Marine Hospital, New Orleans, Louisiana.
Hay, William E., University Hospital, Omaha, Nebraska.
Judd, Delbert K., University of Chicago, Chicago, Illinois.
Kodama, George H., Methodist Hospital, Omaha, Nebraska.
Kronmiller, Leslie, St. James Hospital, Butte, Montana.
McNeill, Lloyd S., Salt Lake County General Hospital, Salt Lake City, Utah.
Meininger, Willard M., San Diego County Hospital, California.
Metheny, Ralph S., St. Elizabeth Hospital, Lincoln, Nebraska.
Newton, Lyle A., United States Navy Hospital, San Diego, California.
Okazaki, Kyuro, St. Margaret's Hospital, Kansas City, Kansas.
Reff, Alan R., Immanuel Hospital, Omaha, Nebraska.
Seng, Omer L., Missouri Methodist Hospital, St. Joseph, Mo.
Shaw, Wilfred L., University Hospital, Omaha, Nebraska.
Staley, Robert E., Swedish Hospital, Seattle, Washington.
Struble, Gilbert C., Walter Reed Hospital, Washington, D. C.
Wright, George W., United States Navy Hospital, Mare Island, California.
Young, Richard H., Peter Bent Brigham Hospital, Boston, Mass.

THE SOCIETIES

A regular meeting of the **Lancaster County Medical Society** was held in the Sharp Building May 6, 1930, Dr. George Walker presiding.

The first paper of the evening was read by Dr. Clarence Emerson on "The Management of Tuberculous Empyema." This paper was one of a series of papers on surgical management of tuberculosis, prepared by Dr. Emerson and being published in the Nebraska State Medical Journal. Dr. Emerson pointed out the frequent occurrence of effusion in tuberculosis, the presumptive diagnosis of tuberculosis to be made when fluid in the pleura is apparently sterile, and the primary nature of some tuberculous pleuritis. The treatment employed in this condition should not be thoracostomy unless secondary infection has occurred. Simple aspiration is safe and collapsing of the cavity may be necessary in order to obtain a cure. The paper was discussed by Dr. Welch and Dr. Rickard.

The second paper of the evening was read by Dr. Everett E. Angle on "Cystoscopy in Children." Dr. Angle pointed out the rapid development in the last few years of the science of cystoscopy which has paralleled the development of more refined instruments. The most recent advances in this line have been the development of cystoscopes of such small caliber that they can be used in very young children. He pointed out the importance of cystoscope drainage in pyelitis which does not respond to more simple measures and also the occurrence of renal calculi, deformities, and obstructions of the urinary tract in children which require cystocopic study and treatment. This paper was discussed by Drs. A. D. Munger, Wegner, Welch and Wiedman.

At a special meeting of the **Lancaster County Medical Society** to which the public was invited Dr. Charles Singer, Head of the Department of the History of Medicine, London University, addressed the Society in the Sharp Building, May 28, 1930. He was introduced by H. W. Orr and his subject was "The Transition of Medieval to Modern Science." Using lantern slides Dr. Singer gave an interesting lecture, illustrating by pictures from old books, works of art, and charts. He showed how the medieval man was concerned with the general aspects of his finite universe which he was able to chart graphically, with religion and philosophy, and how the modern age was ushered in by attention to the details of form of plants, animals and man. This attention to form then aroused interest in function, giving rise to experiment which created the great modern scientific age.

About 150 members and guests attended the lecture, after which an informal reception was held in honor of Dr. and Mrs. Singer.

—Roy H. Whitham, Secretary.

The Madison Five County Medical Society was held in the high school auditorium, Bloomfield, June 17, with forty physicians and their ladies present and partaking of a chicken dinner served by the ladies of the town.

Dr. W. D. Runyon, Sioux City, guest of honor, gave an interesting illustrated lecture on the diagnostic problems in gastric symptoms. The relation of focal infections to stomach symptoms was forcibly illustrated. The delusion of finding a duodenal cap defect pointing to ulcer, when the operation reveals a gallbladder disease was brought out.

Dr. P. B. Lonergan, Bloomfield, spoke on the cash basis for the physician. Bloomfield is the town that has been on a supposedly cash basis for several years and Doctor Lonergan told of the way it was worked by the medical profession. Apparently the cash basis is a success in medical dealings as well as in commercial lines.

The question of county liability for medical care of the needy was discussed and a committee was appointed to gather data for presentation to county boards advising them that the supreme court of this state had several times decided the liability of counties for medical services to the needy and advising them that hereafter the medical profession will expect them to assume this liability.

The Lincoln County Medical Society held its regular meeting June 13th, 1930, at the Hotel Yancey, North Platte. Dr. F. B. Young of Gering and Dr. A. L. Cooper of Scottsbluff gave very interesting talks on Paleopathology which was illustrated with lantern slides, also several specimens were shown.

The **Northeast Nebraska Medical Society** regular meeting was held at Pender, June 19, Drs. Francis of Bancroft, Gramlich of Walthill, Theodore of Winnebago, and Buis of Pender presented a series of cases as follows: Essential Hypertension; Sarcoma of the Upper Jaw; Charcot's Joint (Elbow); Aortitis; Old Skull Fracture; Tuberculosis of the Lung with X-ray Plates Showing Healing of Cavities; Two Cases of Cretinism in Children; A Case of Celiac Disease Recovered on the Banana Treatment; also A Case of Malignancy of the Glands of the Neck with Metastasis to the Liver Apparently Recovering after Deep X-ray Therapy; A Case of Pernicious Anemia; Three Cases of Heart Lesions. The ladies served a six o'clock chicken dinner on the Logan Valley hospital lawn.

The **Harlan County Medical Society** met June 19, at Franklin. Dr. Amy Chapman, delegate to the State association, gave an extended report of the meeting. The balance of the program follows: Dr. Uridell, Goiters; Dr. Calbraths talked on In-ordinary Surgical Cases; Dr. Hamel on Scarlet Fever, and Dr. Kingsley on Rheumatism. Dr. Hal C. Smith invited all the gentlemen to his home after the meeting, where he served a fine Dutch lunch to them.

HUMAN INTEREST TALES

Dr. H. J. O'Donnell has located at Paxton.

Dr. C. R. Williams from Kansas City has located at Hemingford.

Dr. J. P. Gilligan, O'Neill, attended the St. Louis clinics in June.

Dr. F. J. Kalal, formerly of Silver Creek, has located at Pierce.

Dr. W. J. Conner, formerly of Petersburg, has located at Fullerton.

Dr. Richard Brogan, formerly of Butte, Mont., has located at Humphrey.

Dr. H. E. Glatfelter, Central City, is a candidate for Railway Commissioner.

Dr. Frank Barns, Albion, is abroad this summer doing postgraduate work.

Dr. and Mrs. J. R. Taylor, Sidney, made a trip east the latter part of June.

Dr. W. E. Packwood has been reported very ill at his home at Riverton.

Dr. A. Jones has become associated with the Doctors Lynch at Fairbury.

Dr. and Mrs. E. A. Creighton, Red Cloud, are spending the summer in Europe.

Dr. A. J. Ramsey, Auburn, recently submitted to an operation at St. Joseph, Mo.

Dr. H. C. Sumney, Omaha, has been very ill during the summer at Rochester, Minn.

Dr. Lee Farmer, Alliance, has been promoted to major in the Officers Reserve Corps.

Dr. F. J. Murray has been elected president of the staff of Immanuel hospital, Omaha.

Dr. V. L. Siman, Winside, had two physician's satchels stolen from his car recently.

Dr. L. F. Chapman, owing to ill health, has left West Point for a more suitable climate.

Dr. and Mrs. H. O. Bell, York, suffered severe injuries in an auto collision late in June.

Dr. J. M. Curtis, Tecumseh, has been promoted to major in the Reserve officers, U. S. army.

Dr. E. E. Boyd, Central City, has been promoted to a major in the Officers Reserve Corps.

Dr. Robert Rodwell, recently an interne at Lincoln General Hospital, has located at Cambridge.

Dr. H. H. Whitlock, formerly of Omaha, has entered the Marine Hospital service at New Orleans.

Dr. W. E. Bornemeier, Chicago, visited the home of his parents at Murdock, the last of June.

Dr. William Hay, Laurel, recent graduate, is doing locum tenans work at Mullen this summer.

Dr. and Mrs. J. H. Downing, Rising City, recently celebrated their golden wedding anniversary.

Dr. E. J. Bild, formerly located at Page, but more recently at Doon, Iowa, has located at Wausa.

Dr. H. M. Robbins, West Point, and Miss Mildred Brenner of Columbus, Ohio, were married recently.

Douglas county physicians and their families enjoyed a picnic at the Omaha Country Club, June 16.

Dr. S. P. Cresap, Nebraska City, has recently been a patient in an Omaha hospital for a heart affection.

Dr. Walter Benthack, who recently moved from Pierce to Wayne, has opened a hospital at the latter place.

The sympathy of the profession will go out to Dr. Max Flotow, Omaha, in the loss of Mrs. Flotow, recently.

Dr. R. C. Bowie, Ft. Morgan, Colorado, a former practitioner of Table Rock, visited the latter place recently.

Dr. F. W. Luhman, who several years ago left Pender for a location in Texas, has returned and opened an office.

The mother of Dr. J. P. Lord, Omaha, died at Dixon, Ill., in June, at the age of one hundred years and a few days.

The Literary Digest recently devoted more than a page to Dr. F. A. Brewster, Holdrege flying physician and surgeon.

The wedding of Dr. William Gentry, and Miss Esther Nystrom, Omaha, is announced. Dr. Gentry is a native of Scottsbluff.

Dr. and Mrs. J. Hartman, Crete, enjoyed a circular motor trip through a part of the middle west the last half of June.

Dr. and Mrs. Don Owen, Omaha, spent a month with the doctor's parents, Dr. and Mrs. F. S. Owen at Santa Barbara, Calif.

Dr. H. P. McKnight, formerly of Long Pine, recently suffered an attack of apoplexy. He is with his daughter at Kearney.

Dr. C. T. Cowen, for a short time at Murray, has taken a government position in the Sandwich Islands and has sailed for his post.

Dr. and Mrs. C. W. Pollard, Omaha, made a motor trip to New England in June visiting their son, Dr. Joseph Pollard at Hanover, N. H.

Dr. P. M. Elwood, former practitioner at Silver Creek, has returned and resumed practice in succession to Dr. Kalal, removed to Pierce.

Dr. W. K. Riley, Wisner, has been appointed to a position in the government hospital at Ft. Lyons, Colorado, and has taken up his duties.

Three Council Bluffs physicians have been appointed to the staff of Creighton Medical college, Drs. W. E. Ash, G. V. Caughlin and Isaac Sternhill.

Dr. E. C. Foote, Hastings, has 5,200 feet of moving pictures of his trip around the world and recently showed the film to an audience at Kenesaw.

Four Omaha physicians are in Europe for special study at this time: Dr. Charles McMartin, Dr. Charles M. Swab, Dr. James F. McDonald, Dr. J. J. Borghoff.

Nebraska friends of Dr. Carl A. Hedblom, Chicago, will be glad to learn that has has about recovered from an alarming infection incurred early in the summer.

The death, June 30, of Mr. E. E. Muffitt, a familiar figure in Omaha surgical supply houses for almost fifty years, is announced. He had of late years been with the Seiler Surgical Co.

Dr. Frederick G. Kolouch, Schuyler, one of the four Nebraska physicians now owning airplanes, was granted a pilot's license in July, perhaps the first Nebraska physician to be so honored.

Dr. and Mrs. H. B. Lemere of Omaha are about to move to Los Angeles where the doctor will engage in his specialty. The Omaha office of Lemere and Banister will be in charge of Dr. Philip Romonek, a present member of the firm.

Dr. and Mrs. Palmer Findley, Omaha, have returned from an extensive motor trip that took them to Hot Springs, Va., where the doctor read a paper before the American Gynecological association, to Philadelphia where the son, Dr. Pressley Findley graduated at Jefferson Medical College, to Danville, Ky., the home of Dr. Ephriam McDowell, and to Detroit to the A. M. A., where he presented a paper.

NEBRASKA DIVISION OF VITAL STATISTICS

	1929
TOTAL BIRTHS	26,591
Attended by Physicians	26,283
Attended by Midwives	176
Attended by others	132
Hospital Births	5,957
Illegitimate Births	510
PUERPERAL DEATHS	
Accidents of pregnancy:	
Abortion	3
Ectopic gestation	4
Others under this title	2
Puerperal hemorrhage	14
Other accidents of labor:	
Cesarean section	7
Other surgical operations and instrumental delivery	0
Others under this title	6
Puerperal septicemia	79
Puerperal phlegmasia alba dolens, embolus, sudden death	15
Puerperal albuminuria and convulsions	22
Following childbirth not otherwise defined	0
TOTAL	152

Even the weatherman is getting that way and occasionally talks dry and acts wet.—San Francisco Chronicle.

ROSTER OF OFFICERS—1930

K. S. J. Hohlen, Lincoln, President	1931
Lucien Stark, Norfolk, President-elect	1932
J. M. Willis, McCook, Vice President	1932
F. B. Young, Gering, Vice President	1932
R. B. Adams, Lincoln, Secretary-Treasurer	1931

COUNCILORS

A. P. Overgaard, Omaha, Secretary	1933
H. J. Lehnhoff, Lincoln	1933
W. R. Boyer, Pawnee City	1933
A. E. Cook, Randolph	1933
Morris Nielsen, Blair	1931
Frank Tornholm, Wahoo	1931
H. E. Potter, Fairbury	1931
W. J. Douglas, Atkinson	1931
R. D. Bryson, Callaway	1932
L. W. Rork, Hastings	1932
C. A. Selby, North Platte, Chairman	1932
A. L. Cooper, Scottsbluff	1932

DELEGATES TO THE A. M. A.

B. F. Bailey, Lincoln	1931
R. W. Fouts, Omaha	1932

DELEGATE TO COUNCIL ON MEDICAL EDUCATION OF THE A. M. A.

J. S. Welch	Lincoln

PROGRAM COMMITTEE

R. B. Adams, Chairman	Lincoln
John Thompson, Chairman Medical Section	Lincoln
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CONFIGURATION OF THE HEART IN CARDIAC DISEASE*

ARTHUR L. SMITH, M. D., F. A. C. P.,
Lincoln, Nebr.

An exact diagnosis of heart disease cannot be made unless the etiology, pathology, pathologic physiology and functional capacity of the heart are known.

Many etiological factors must be considered and when the real cause is found this will aid greatly in diagnosis and treatment of abnormal cardiac troubles.

In abnormal physiology we must know if there is derangement of any of the five physiologic factors: Rhythmicity, irritability, conductivity, contractility and tonicity.

Pathologic factors must be ferreted out in any change in size, shape or position of the heart and in any abnormality of the endocardium, the myocardium and the pericardium.

The functional capacity varies with the ability of the heart to do the work ordinarily required of it.

In this paper will be considered a small part of the pathologic changes in the heart due to disease of this organ. This will consist in the consideration of the various cardiac configurations. The principal reason for this article is the many patients I have seen who had diagnoses of heart disease made after roentgenogram examinations only. I feel that no one, no matter how capable, is able to make an accurate diagnosis of heart disease by the use of the x-ray alone. The most skillful cardiologists, after all diagnostic methods are exhausted, cannot always arrive at a definite decision as to the exact disease present. In my opinion, in every case of cardiac trouble it is necessary to examine the entire body and employ any accessory methods which may assist in arriving at a definite conclusion.

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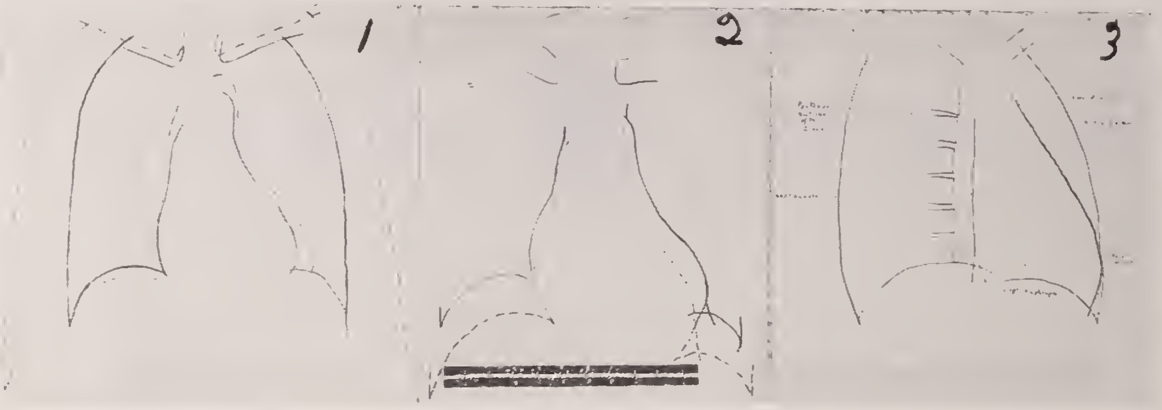
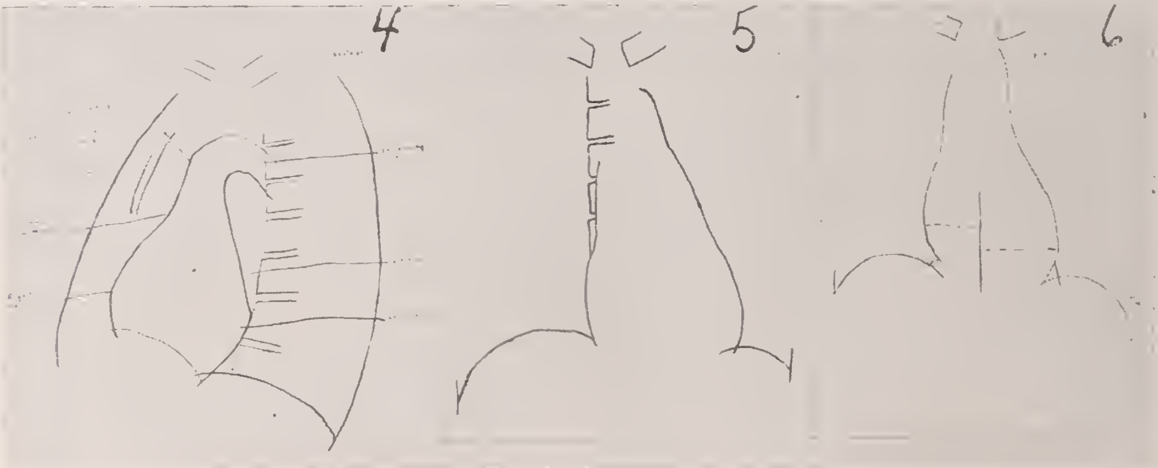
*Read at meeting of the Nebraska State Medical Association, Lincoln, May 12, 1930.



1. Heart normal in size, shape and position.
   Solid line, orthodiagram.
   Broken line, roentgram.
2. Normal heart. Shows change in shape and position with deep inspiration.
3. View of normal heart in right oblique position.

The x-ray examinations have supplied us with many invaluable facts, yet most of them can be elicited clinically by skilled cardiologists. We often hear of x-ray diagnosis instead of x-ray pictures. These pictures have their place in the final diagnosis but their value is often overestimated.



4. View of normal heart in left oblique position.
5. Asthenical heart. Scoliosis to right. Approaches mitral configuration but no congestion of the hilus, no right sided enlargement and no dilatation of the left auricle posteriorly.
6. Normal heart of the long slender type.

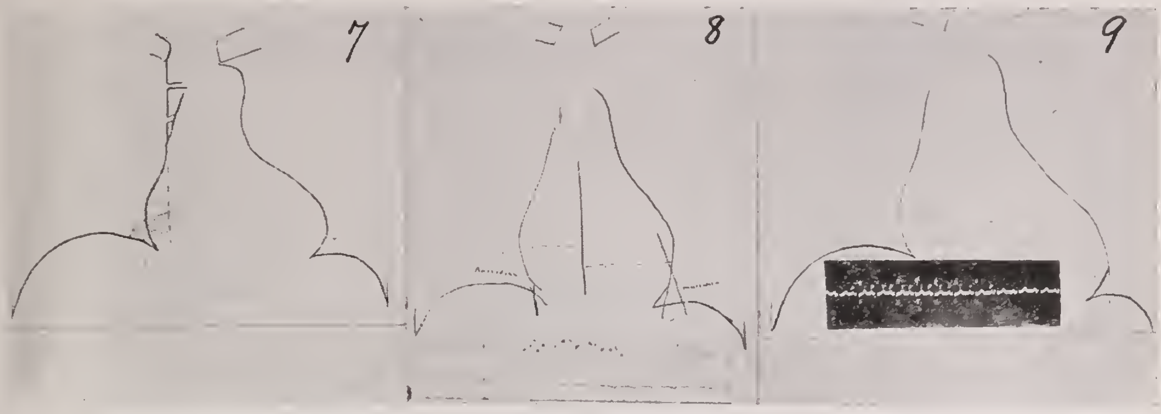
The principal advantage of radiography is the making of permanent records of size, shape and position of the heart and its large vessels while the fluroscopy is valuable in watching the movements of these organs. Combined fluroscopy and orthodiagraphy are the most valuable, since the heart movements can be observed and recorded at any angle.

THE CARDIAC SHADOW

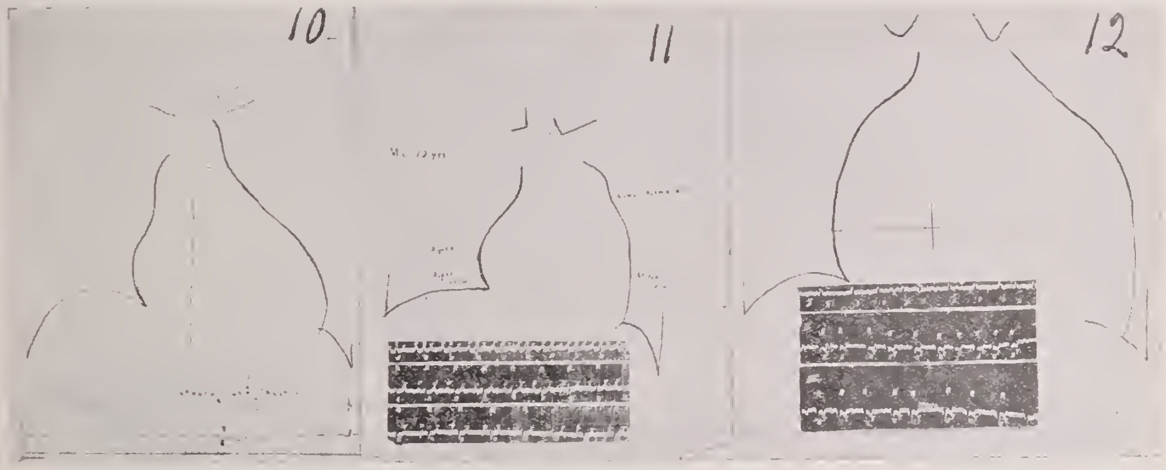
The right border of the heart shadow is composed of the right auricle and the ascending aorta. Each describes a convex arc, the auricle extending about one centimeter more to the right than the aorta.

The left border is made up of four components. From above downward, these are, the arch of the aorta, the pulmonary artery, the left auricular appendix and the left ventricle, the latter occupying the lower half.

The arch of the aorta makes a variable convex arc and extends farther to the left than the pulmonary artery. The pulmonary artery shows either as a straight line or a convex arc. The left auricular appendix, if it shows at all, makes a small nodular shadow immediately below the conus pulmonalis. The left ventricle describes a wide convex arc running downward and outward and disappears in the shadow of the diaphragm. At the left cardiophrenic angle the pencardium is sometimes seen as a band-like shadow connecting the apex with the diaphragm. This is often mistaken for adhesions.



7. Broad heart with high diaphragm. Normal.
8. Globe heart of athlete. Normal. In polygram change in rhythm due to vagal inhibition.
9. Dilated athletic heart. Sinus tachycardia. Rate 112



10. Mitral configuration due to pure mitral insufficiency. Elongation and widening of the left ventricle. Left auricle and conus pulmonalis dilated. 1. Extra-auricular systole. 2. Extra-ventricular systole.
11. Mitral stenosis. Atrophic left ventricle. Dilated left auricle, conus pulmonalis, right ventricle and auricle. Sinus tachycardia, split "P" waves and right axial deviation.
12. Mitral stenosis. Myocardial degeneration. General dilatation. Auricular fibrillation. Right axial deviation.

The superior border shadow is made by the arch of the aorta but it is often a fusion of the trachea, esophagus and other blood vessels. The inferior border is composed of the two ventricles but is lost in the shadow of the diaphragm except in cases of low standing diaphragms.

RIGHT ANTERIOR OBLIQUE POSITION

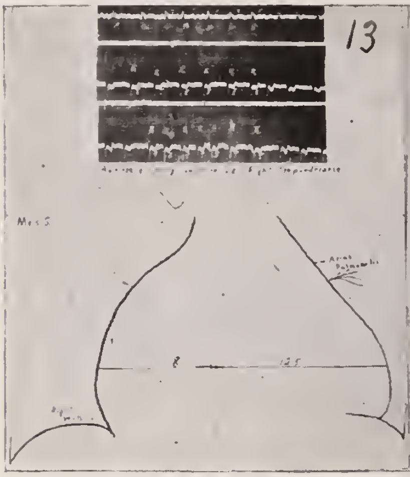
In this position a good view of the anterior aspect of the right ventricle is obtained. The left auricle occupies a position on the posterior upper portion of the shadow. The beginning portion of the aorta is well viewed from this position as it emerges from the heart shadow. The descending part also can be seen, a fact of great importance when looking for atheroma.

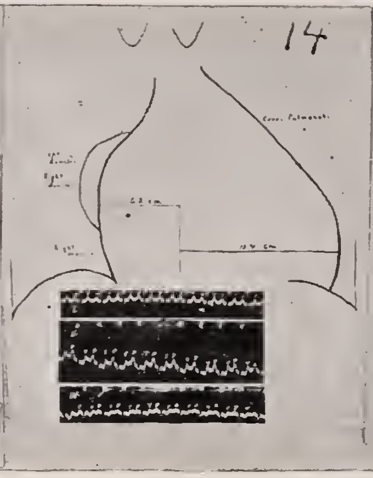
LEFT ANTERIOR OBLIQUE POSITION

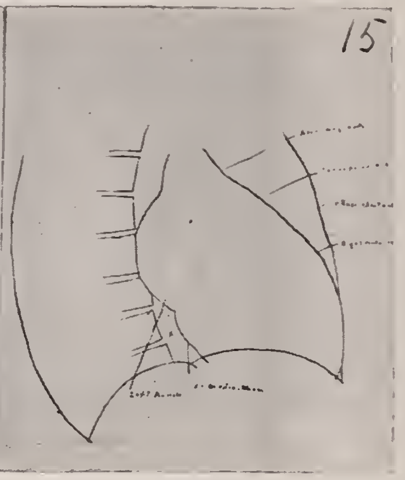
In this position both the anterior and posterior surfaces of the left ventricle are seen. In the upper portion the left auricle is just anterior to the mediastinal space. The descending aorta is often visible also.

SHAPE OF HEART

The size, shape and position of the heart varies as does the body of the patient. In the long slender person the heart is of the long slender type (so called drop heart) and many of the described land marks disappear. The heart takes on the appearance of the mitral stenosis type.







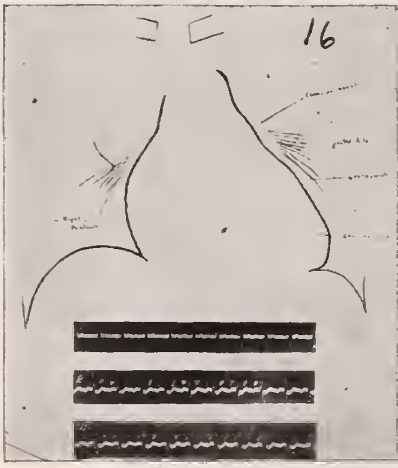
13. Mitral stenosis. Myocardial degeneration. General dilatation. Pulsating hiluses. Auricular fibrillation. Fluid in chest and abdomen.

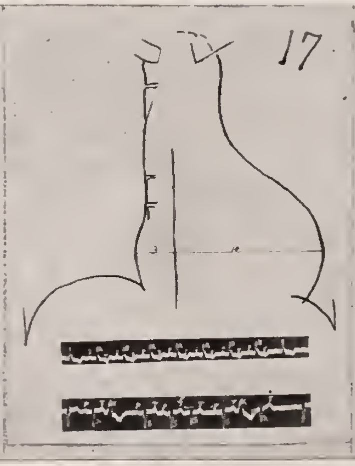
14. Mitral stenosis. Generally dilated. Left auricle dilated to the right of the right auricle. Right ventricle showing. Typical electrocardiogram in mitral stenosis. Split "P" and right axial deviation.

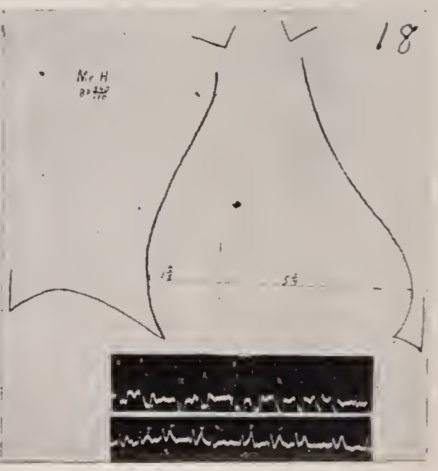
15. Same as 14. Right oblique view. Left auricle fills mediastinal space.

In short persons the heart is round and often broad, giving the superficial appearance of hypertrophy or dilatation.

The normal position of the heart is about the center of the transverse chest line with two-thirds of the heart diameter on the left and one-third on the right of the center line. There are many variations due to changes in lung tissue and in the position of the diaphragm leaflets.







16. Mitral configuration. Combined mitral insufficiency and stenosis. Two to one heart block. Rate of auricles 194, of ventricles 97. Right axial deviation.

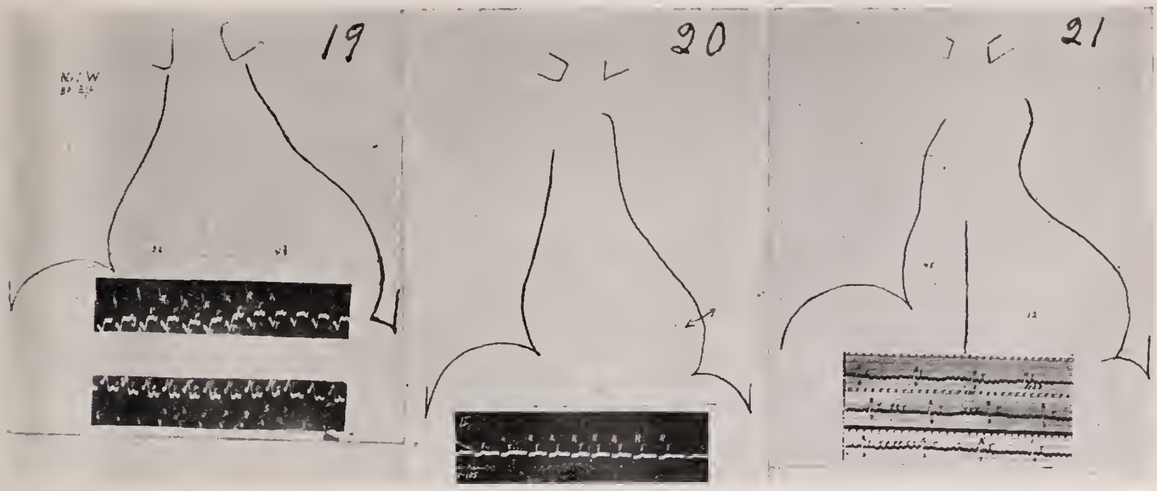
17. Hypertensive heart. Hypertrophy of left ventricle which is hard and round and does not change shape with breathing. Right branch block. Extra systoles in right ventricle.

18. Hypertensive heart. Concentric hypertrophy with dilatation and myocardial degeneration. Auricular fibrillation. Left axial deviation.

The size of the heart ordinarily varies directly with the size of the body, but this is not always true. In many lung abnormalities, in congenital heart and vessel changes and diseases of other organs the size, shape or position of the heart may vary in such a way as to resemble pathologic configurations. Thus it can be readily seen that any examination (as roentgram) which takes into consideration only these facts will oftentimes be, diagnostically, in error.

In Vaquez' clinic in Paris, Bordet has elaborated many complicated measurements of various diameters of the heart, while in Wenckebach's clinic and in the Heart Station in Vienna, the transverse diameter is the only one usually considered.

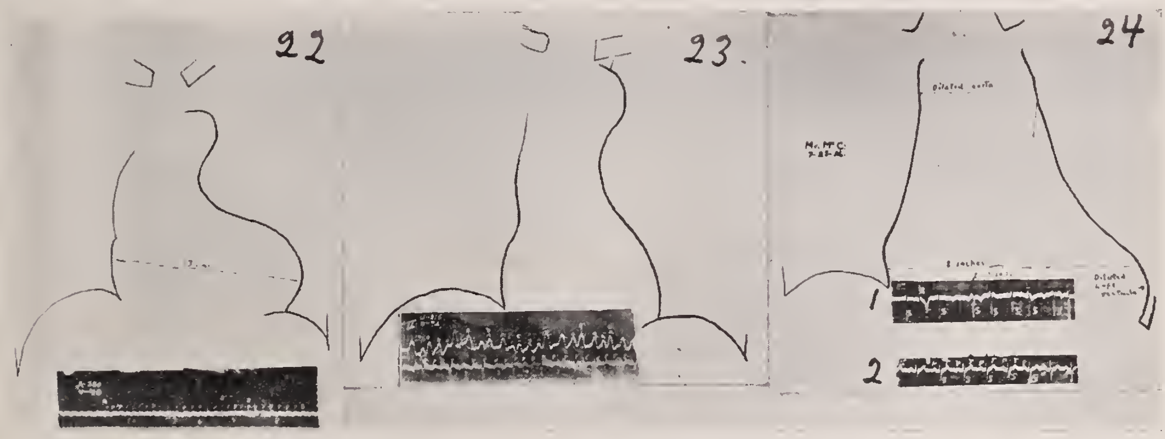
In the usual case, in my opinion, the more simplified method is all that is necessary in the orthodiagrams and teleroentgrams.



19. Hypertensive heart. Myocardial degeneration. General hypertrophy and dilatation. Complete right branch block.
20. Aortic stenosis. Breadth of thorax decreased. Hypertrophy left ventricle. Auricular fibrillation.
21. Aortic configuration. Endocardial insufficiency of the aortic valve. Hypertrophy and dilatation of the left ventricle. Right transverse diameter decreased. Auricular fibrillation. Complete heart block. Rate of ventricle 36.

LEFT VENTRICULAR HYPERTROPHY

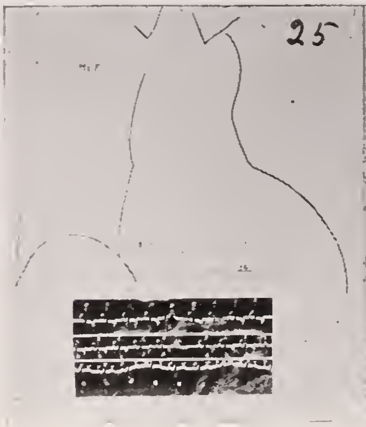
In this the left ventricle shadow extends to the left and the left portion of the transverse diameter is increased to about two centimeters. The apex is round and changes little in shape with breathing. It is best examined in the left anterior oblique position. The best example of hypertrophy is seen in arterial hypertension. Later in this condition, dilatation will be associated with hypertrophy and as the enlargement progresses the heart will finally be enlarged in all diameters. Displacement of the heart toward the left may be mistaken for hypertrophy of the left ventricle.



22. Sclerosis of the aorta with transverse position of the heart. Diagonal diameter decreased. Irregular auricular flutter.
23. Elongation and dilatation of the aorta. Angina pectoris. Three to one auricular flutter.
24. Dilated aorta. Dilated left ventricle. Aortic insufficiency. 1. Auricular fibrillation. 2. Sinus rhythm after nine days treatment.

MITRAL CONFIGURATION

In mitral configuration the left border instead of being straight is bulged to the left in the region of the left auricle and the pulmonary artery and the right ventricle enlarging pushes the right auricle more to the right. The mechanism of this condition is as follows, in mitral disease the pressure in the left auricle is increased, then the left auricle hypertrophies slightly then dilates, next a passive congestion increases the pressure in the pulmonary circulation, the pulmonary artery becomes more prominent, the right ventricle hypertrophies then dilates and finally the right auricle goes through the same changes. In the anteroposterior view the heart is globular in shape. This happens in pure mitral stenosis. The left auricle may be so dilated as to appear to the right of the right auricle. Here again, the dilated auricle may fill the mediastinal space. In pure mitral stenosis the left ventricle is not enlarged and may even appear atrophied. Mitral stenosis is often associated with mitral regurgitation so the left ventricle is usually enlarged somewhat. The typical shadow will then be a bulging of the entire left side below the aortic arch.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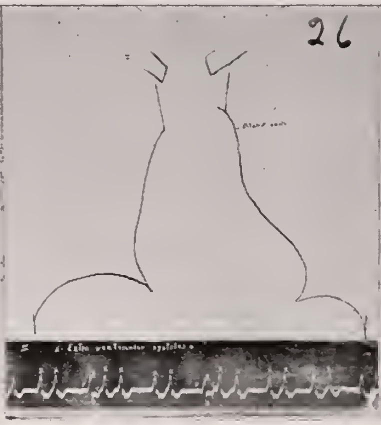
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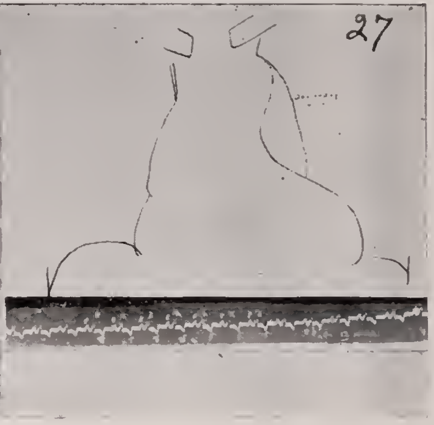
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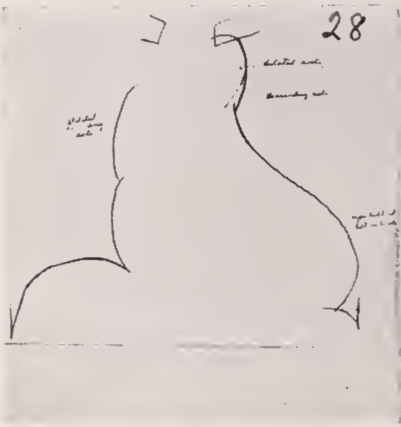
25. Aortic insufficiency. Hypertrophy left ventricle. Dilated aorta. Heaving apex impulse. Complete right branch block.
26. Mesaortitis luetica. Early. Extra-ventricular systoles. Left branch block.
27. Mesaortitis luetica. Diffused dilatation of the whole aorta and aortic ring. Hypertrophy left ventricle. Complete right branch block.

When the right ventricle enlarges the entire heart rotates to the left. This results in the partial disappearance of the aortic arch and the left ventricle may be pushed posteriorly. In this case the left border is composed of the tip of the aortic arch, the conus pulmonalis and the right ventricle. There appears to be a decrease in the width and an increase in the length of the shadow.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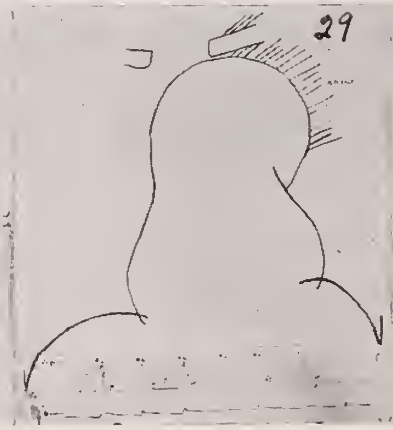
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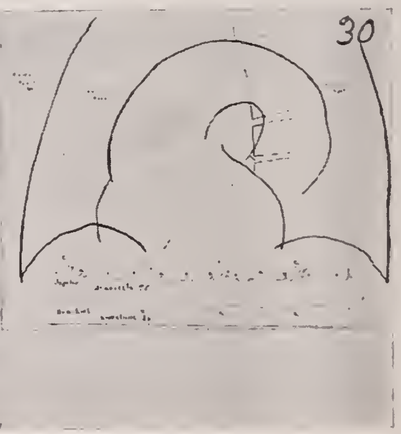
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28. Mesaortitis luetica. Typical. Ascending aorta to right of the right heart shadow. Dilatation of the aorta, aortic ring and left ventricle.
29. Aneurism of the aortic arch (luetic). Little pulsation of aorta due to thickening of the wall or thrombosis. Left diaphragm higher. High pulsation in jugular polygram.
30. Diffused dilatation of the aorta (leutic). Left oblique. Enlarged left ventricle. Complete heart block. Rate of auricle 78, of ventricle 26.

It must not be forgotten this globular shadow is normal in children.

TRICUSPID INSUFFICIENCY AND STENOSIS

These lesions result in an increase in the size of the right auricle or ventricle or both. The greatest extremes of enlargement are possible. If the right ventricle is enlarged the heart will be rotated to the left.

CHRONIC NEPHRITIC AND ARTERIOSCLEROTIC HEART

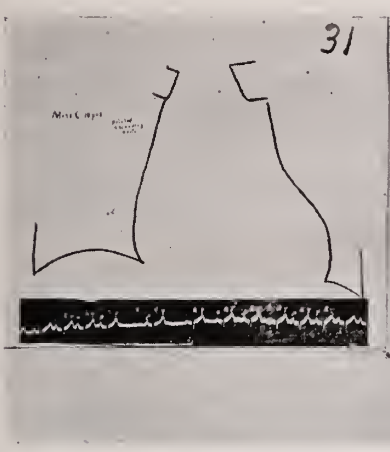
The enlargement is principally in the left ventricle, but, sooner or later, owing to breaks in compensation, the entire heart becomes dilated.

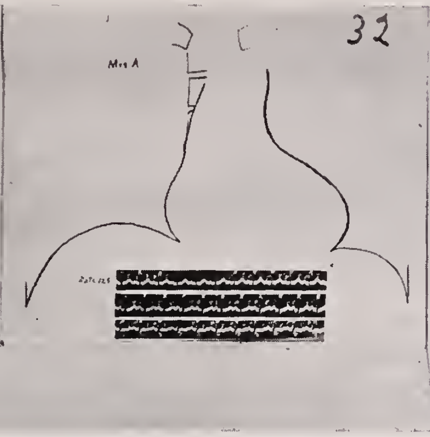
COR PULMONALE

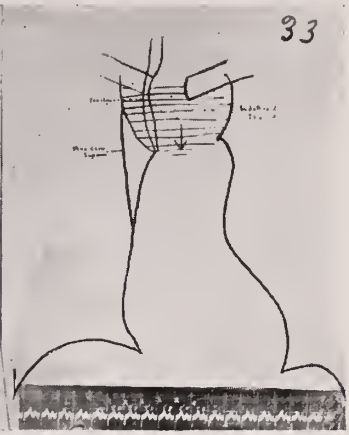
Any condition tending to increase the work of the right heart, such as pleural adhesions or thickening, kyphoscoliosis, emphysema, bronchiolitis obliterans or indurative pneumonia will result in hypertrophy and dilatation of the right heart. The same picture on the right side of the heart is produced by mitral stenosis. Chronic fibrinous pulmonary tuberculosis seldom results in this change, probably due to the general weakness of the entire body.

DROP HEART

This type of heart is frequently seen in emphysema and chronic tuberculosis. The heart hangs in the vertical position due to the rotation of the heart and the extremely lax position of the diaphragm. It appears to be narrowed and elongated but it is really enlarged, principally in the right ventricle.



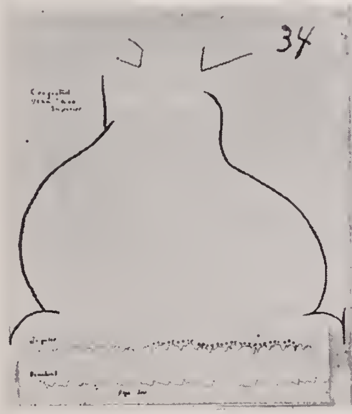


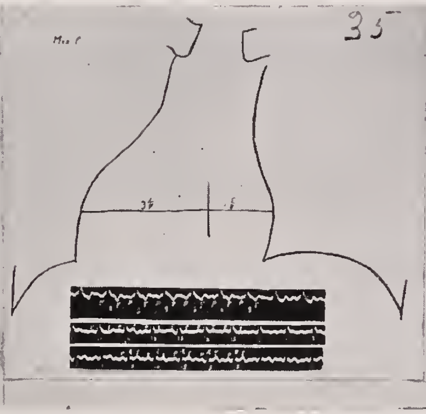


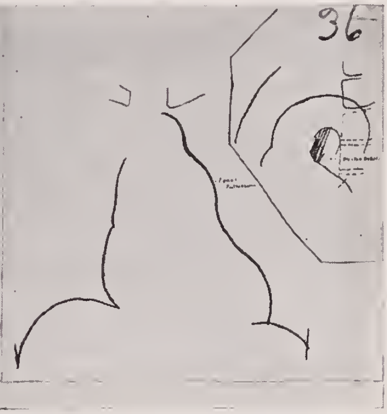
31. Non-luetic dilatation of the aorta in 18 year old girl. Sino-auricular block.
32. Toxic myocarditis of thyro-toxic origin. Metabolic rate plus 48. Sinus tachycardia. Rate 125.
33. Retrosternal thyroid (toxic). Vena cava and trachea pushed to right. Must be differentiated from dilated aorta. Does not pulsate. Moves with swallowing. Metabolic rate, plus 42. Heart rate, 154.

AORTIC CONFIGURATION

Aortic configuration is an enlargement of the left ventricle and a widening of the aortic shadow. This is the cor bovinum. The hypertrophy and dilatation of the left ventricle is often very great in aortic regurgitation and less so in aortic stenosis. The apex beat is strong and heaving, more so than in the hypertensive heart.







34. Pericardial effusion. No subdivision of the heart shadow. Pulsation decreased. Pulsus alternans shows embarrassment of the myocardium.
35. Dextrocardia. Normal heart. Typical electrocardiogram, all waves directed downward in first lead.
36. Ductus arteriosus (botalli). Embryonal channel between the aorta and the pulmonary artery. Pressure same in each. Conus pulmonalis dilated.

AORTIC ENLARGEMENT

Mesaortitis, atheroma or arterial hypertension results in an enlargement of the aorta. Mesaortitis, attacks the beginning of the aorta and the most pronounced enlargement will be seen in this area. If it is located higher up it usually produces an irregular dilatation. Atheroma is usually located more distally in the aorta and produces a diffuse enlargement. Arterial hypertension may appear alone or in conjunction with either of the foregoing. In either, the aorta is diffusely dilated.

If the aorta is enlarged in the beginning portion it disturbs the relation of the right auricle and aortic shadows in as much as the aorta will be dilated to the right in line with the right auricle shadow or oftentimes beyond this. This is the typical appearance of mesaortitis involving the ascending aorta. The actual width of the aorta can be determined orthodiagraphically by the Kreuzfuch's method. The normal width is from one and one-half to three centimeters.

DISEASE IMPRINT ON THE HEART

Although the size, shape and position of the heart varies in different individuals every disease affecting the heart leaves its imprint on it in an often recognizable way. To me it is hard to believe cardiac disease can be present without some discoverable change in the heart. Oftentimes this can be found only by patient, painstaking search. This does not mean that a normal appearing heart cannot be the seat of disease. There can be functional as well as organic changes and a person can die from either one.

CONCLUSIONS

Disease of the heart cannot be accurately diagnosed by any one method.

There is no such thing as x-ray diagnosis in heart disease but merely x-ray pictures of the heart. This is only a small part of the examination.

The size, shape and position of the heart varies greatly in the normal person and if these alone are considered the diagnosis will often be incorrect.

Disease of the heart usually leaves some organic change due to increased resistance to the blood stream in various parts.

Accurate diagnosis of heart disease depends upon careful history taking, complete physical examination and laboratory findings combined with the employment of sensitive scientific instruments and exacting interpretation of the findings.

Finally, no diagnosis is complete until the etiology, the pathology, the pathologic physiology and the functional capacity of the heart in a given patient is known.

Since cardiovascular disease causes many more deaths than any other disease and since it seems to be increasing, it is well that we employ every known diagnostic means to arrive at a definite and accurate conclusion as to the condition of the heart in each patient examined.

PSYCHOSIS—MILDER FORMS, TREATED AS PHYSICAL DISORDERS*

G. W. DISHONG, M. D.,
Omaha, Nebr.

A large and important group of individuals going the rounds of physicians and surgeons, are being treated for physical disorders unsuccessfully, because of underlying mental disturbance which too often is entirely ignored. The patient may be a mother, overworked and anxious; a clerk or business man, temperamental and tense; a domestic or common laborer—men and women from all walks of life. But usually the workers—those who are trying to carry on and have found the road rather steep and stony.

The symptoms complained of are variable and numerous, but usually include the following: insomnia, easy fatigue, headache, abdominal discomfort, compulsive fears, and morbid introspection. Such cases represent a complex problem in biologic disfunction, and may be approached from several angles. The surgeon, internist, endocrinologist, and psychiatrist, all see signals for their approach. Now in truth the symptoms just enumerated frequently do occur as primary disorders, properly treated by the surgeon and internist; but the cases under discussion are mentally sick with secondary physical manifestations, and such cases should be approached from the mental level. The abdominal surgeon realizes the relationship between mental strain and colon disturbance; and the internist realizes that psychologic tension may cause functional gastric disturbance simulating organic disease. Nevertheless we must keep in mind the fact that nervous and mental diseases are frequently due to overload from physical disease. Thus a husky farmer boy rather suddenly developed a typical catatonic precox reaction with stupor, mutism, and stereotypy, that resisted all treatment until an impacted and badly diseased third molar was extracted, after which the condition cleared in forty-eight hours.

In the report of a recent survey, one reads "that 75,000 new patients are admitted annually to the state institutions for the insane," and "that more hospital beds are devoted to the care of the mentally afflicted than to all other classes of patients combined."(1) Many of this number had symptoms in mild form for months or even years before the final breakdown—numerous indefinite symptoms of bodily discomfort, secondary to the mental conflict not at first detected or considered. It is extremely difficult at times to differentiate mild psychosis from certain forms of neurosis, and too often the class under discussion is considered a part of that great group of neuropathic individuals commonly called "neurasthenic". Too often after such a tentative diagnosis all scientific interest ceases, and the patient is told to "take a vacation", or "forget it". Finally after successive futile attempts to find relief the patient passes into the hands of the cultist or charlatan, and announcement is made of prompt and miraculous cure.

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*Read before the annual meeting, Nebraska State Medical Association, Lincoln, May 13, 1930.

Suffering humanity, hopeful and expectant, is always eager to acclaim the master physician—one who can relieve distress by a potent draught or magic touch; and too often suggestion and emotion have resulted in temporary relief mistaken for a cure. In handling this sort of patient we must realize that any form of treatment may result in apparent cure, provided the procedure arouses a sufficiently powerful emotional response of a positive nature. The emotional experience, suddenly or gradually acquired, which gives the patient hope and confidence, (call it faith, if you will) is necessary before normal function can occur. But these sudden "cures" are usually temporary and in the nature of hysteria. Actual improvement can only come by removing the cause, which is usually mental, and due to intrapsychic conflict. As Hohman puts it, "Psychologic deviations do not come out of a clear sky but are understandable in terms of life experiences and conflicts".(2)

Note also Foster Kennedy's remarks: "The argument between Plato and Aristotle continues, The Vitalists viewing man as Energy, the Structuralists as a Machine, can not yet compose their difficulties. The notion describing each individual as a transformer of power is perhaps a compromise position truer than either * * * *

"And we must remember there is a phylogeny of behavior as of structure. The pressure of the instincts of hunger, sex, and the herd mould behavior according to our inherited neuronic endowment. However, psychiatrists nowadays analyze too much the conflict of instinct with environmental stress and ignore variations in the instrument of life itself."(3)

We have no quarrel with the assertion that individuals differ in their constitutional endowment of physical and mental traits, and that the patient with an unfavorable heritage will develop symptoms more readily than those without such handicap. Suffice it to say there is a large group of individuals who complain of symptoms without apparent cause. Those who are constitutionally inferior will naturally be predisposed and develop symptoms more readily than those of better poise and greater endurance. But symptoms having occurred, the method of approach would be the same.

Strictly speaking specialization in medical practice is a misnomer. The various functions of the body are so closely related and coordinated that disturbance in one function alters all functions in a greater or lesser degree. This is true of the relationship between mind and body. The brain has long been called the organ of the mind; but one can readily understand, as White maintains, that the entire body is the environment of the mind. A similar idea is expressed in metaphysics of thirty years ago. Borden P. Bowne declares: "Thus man is often said to have a mind or a soul. Here man appears as the possessor of himself; and it is not until we ask who this possessor is, and how he possesses a soul, that we become aware that language is playing a trick with us, and that man does not have, but is, the soul".(4)

While medical analysis is tending more and more to think in terms of biologic unity of mind and body, we have been in error in over emphasizing intelligence as a factor in human conduct, and diregarding the importance of the emotions. This has been a great stumbling block and is the crux of the matter in formulating a plausible explanation of the relationship between mental conflict and physical symptoms.

Herbert Spencer wrote the following many years ago: "And then comes the other great class of feelings, ignored in the current conception of mind—the emotions. Of these, as of the sensations, it is observable that the ordinary ones present from moment to moment are not regarded as feelings at all. Like respirations or winkings of the eyes, their unceasingness makes us oblivious of them. Yet every instant emotions are present. No movement is made but what is preceded by a prompting feeling as well as a prompting thought. And it needs only that the movements shall be large, or difficult, or resisted, to make us aware that an emotion of some kind was its antecedent. So it is with all the other feeble emotions. The day is fine, and there is a slight exaltation of mental state. It is rainy, and a comparative dulness results. Some one liked comes in, and a wave of agreeable consciousness arises; while an emotional cloud follows the sight of an enemy. Similarly with occupations. There is some task-work to be done, and behind all the bodily and mental activities needed, there lies a dim feeling of aversion—a feeling differing greatly from that which accompanies the working at a hobby or the achievement of a success. And then though the aggregate feeling ever passing is so unobtrusive that we hardly think of it as existing, it becomes, under exciting circumstances, almost the sole occupant of consciousness. If altercation arouses extreme anger, the emotions may become so great as even to exclude the power of speech: the thought-element is overwhelmed. Intense alarm may so throw the intellect out of gear as to produce temporary inability to act. The anxiety bred of absorbing affection may extinguish all irrelevant ideas. And this mental element which thus upon occasion shows itself supreme, is in a sense supreme at all times; for the prevailing emotions, higher or lower, are those components of mind which determine the daily conduct, now dutiful now lax, now noble now base. That part which we ordinarily ignore when speaking of mind is its essential part. The emotions are the master, the intellect is the servant".(5)

Sherrington states, "Of points where physiology and psychology touch, the place of one lies at 'emotion'. Built upon sense-feeling much as cognition is built sense-perception, emotion may be regarded almost as a 'feeling',—a feeling excited, not by a simple little-elaborated sensation, but by a group or train of ideas. To such compound ideas it holds relation much as does 'feeling' to certain species of simple sense-perceptions. It has a special physiological interest in that certain visceral reactions are peculiarly colligate with it. Heart, blood vessels, respiratory muscles, and secretory glands take special and characteristic parts in the various emotions. The viscera, though otherwise remote from the general play of psychical process, are affected vividly by the emotional."(6)

With the foregoing in mind it is not difficult to understand how long-repressed emotions can lead to actual physical symptoms, especially functional alterations in the organs and tissues supplied by the involuntary nervous system—resulting in so-called vegetative neurology. The following is an example of severe emotional shock:

In the construction of a smokestack three workmen were supported by a platform suspended from a cross beam seventy-five or one hundred feet high. The platform gave way, and one man crashed to his death, while his two companions clung to the supporting cross beam, hanging by their hands. The older man soon became exhausted and dropped to his death, while his younger companion, a boy of twenty, had the presence of mind to shout a warning to the excited workmen below, and prevented their injury by the falling of his companion. The boy hanging by his hands was rescued later in severe shock, and immediately collapsed. The pulse was rapid and small, respiration irregular, and there was tremor, pallor, cold sweat, and mental confusion. After a few days' strict isolation and rest, all functions gradually became normal.

Later reports indicated that the young man had apparently received no permanent disturbance from his harrowing experience. Now had this individual been predisposed by some constitutional handicap, mental or physical, the outcome probably would have been different. Thus a case of "shell shock" is cited.

This man, a veteran of the World War, had been carrying on successfully and was considered physically fit. He stated he was one of a small squad ordered to storm a hidden machine gun, whose close range was having deadly effect. Only three men were left to close in on the machine gun, and as the patient rushed in, out of ammunition, he crushed the skull of the machine-gun operator with the butt of his rifle. As the machine-gunner fell, the helmet came off and revealed a Prussian woman chained to the machine-gun. As the patient recited this final scene tears streamed over his cheeks and he was entirely overcome with the painful reminiscence. Here was chronic emotional shock. For ten years this man has been completely disabled, yet without demonstrable organic pathology. There were no definite psychotic symptoms, but he had no interest, was stooped, haggard in appearance, pulse small and rapid, respirations shallow and irregular, the hands showed tremor, were cold and clammy and showed vasomotor mottling. Psychotherapy and all other forms of treatment have failed, and apparently this man has permanent invalidism resulting from chronic emotional stimulation.

Health is biologic integration. Soma(7), Psyche, endocrines and emotions—these are concepts of a unified organism, combining all functional activities through the integration of the nervous system. In certain types of mental illness, especially neurosis, the emotions are primarily involved—there is conflict leading to repression. The repressed complexes may be in the nature of fear, hate, or any strong emotion, which has not been finding escape through natural or sublimated channels. In health, or normal adjustment to life's problems, the emotional urge, utilizing the voluntary nervous system, results in adequate and harmonious conduct; while in neurosis the repressed emotional energy tends to overflow into the involuntary nervous system, producing the symptoms commonly known as visceral neurology.

The nervous system is extremely complex: it not only integrates the various structures and functions of the body, but through its instrumentality the body makes adjustment to an ever changing environment. Life is continuous adjustment; and in civilized life there are many urges to actions that must be controlled and may lead to conflict. To quote Spencer again: "Life is a continuous adjustment of internal relations to external relations".

It is quite easy to understand how the emotions can produce a motor response through the action of the voluntary nervous system; but the effect of the emotional drive on the involutary nervous system is less easily understood. The involuntary nervous system supplies the heart, blood-vessels, glands, smooth muscles, and viscera. The emotions may be regarded as stimulators of energy; and strong emotion, whether anger, fright, or other affect, prepares the body for appropriate activities. As Crile puts it: "Such a motor response implies the integration of our entire being for action, this integration involving the activity of certain glands, such as the adrenals (Cannon), the thyroid, the liver, etc., which throw into the blood-stream substances which help to form energy, but which, if no muscular action ensues, are harmful elements in the blood. While this motor preparation is going on, the entire digestive tract is inhibited. It thus becomes clear why an emotion is more harmful than action.

"Any agency that can sufficiently inspire faith, dispel worry, whether that agency be mystical, human, or divine, will at once stop the body-wide stimulations and inhibitions which cause lesions which are as truly physical as is a fracture. The striking benefits of good luck, success, and happiness; of a change of scene; of hunting and fishing; of optimistic and helpful friends, are at once explained by this hypothesis. One can also understand the difference between the broken body and spirits of the animal in captivity and its buoyant return to its normal condition when freed."(8)

It seems logical that there should not be unnecessary emotional preparation without appropriate motor response through the voluntary nervous system. If this is prevented and the energy repressed, it tends to drain off through the involuntary nervous system and cause disturbed function in the viscera, heart, lungs, endocrines, etc. There is a certain amount of repression in the life of every individual. Repressing, or forgetting a painful idea, is nature's way of getting rid of disagreeable impressions—by this means the emotional complexes are forced into the unconscious, where they may remain fairly inactive, but tending to find expression in dreams, slips of the tongue, and various acts one does without thinking. But if this emotional material accumulates to a point where the repression gives way, the liberated complexes will tend to activate the body for appropriate response. Inasmuch as these complexes were repressed because they were disagreeable and incompatable with thought consciousness, conflict is produced, which may result in neurosis, or psychosis. Repressed emotional complexes affect the mass of "feelings", determine mood, and have to do with the interest and zest of living.

The split off emotional complexes, if sufficiently large, may dominate completely and operate as a separate personality, as in conversion hysteria with its paralyses and temperamental storms; or when repression gives way without splitting there is the mental conflict and secondary somatic symptoms as occur in simple neurosis. In the case of a constitutional psychopath the tendency to emotional instability is so great that the ordinary problems of life produce so much disharmony that psychosis may result. Here again the emotional complexes are the crux of the problem. Difficult adjustments and resultant mental pain may cause disintegration of the entire personality, with disordered thought, feelings, and conduct, as in schizophrenia; or a depressive mood may dominate the entire mentality to the extent that there is faulty elaboration of thought, and delusions result as in depressive psychosis.

In neurosis and psychosis there is frequently overload leading to exhaustion—hence rest, mental and physical, is an important element in treatment. However, if we accept the dynamic theory of neurosis, and believe that repressed energy is finding escape in symptoms, it would seem logical and curative to put this energy to work. This is the aim in the treatment of neurosis. We strive through re-education to eliminate conflict and prevent repression to a degree that will allow successful and harmonious adjustment to daily problems. But successful treatment of mild depressive states usually requires complete rest and isolation. These individuals appear fairly normal, and if conditions are such that work seems necessary or is forced upon them, the despondency may lead to troublesome thoughts of self destruction which too often are consummated.

Suicide in these patients may have the appearance of a sudden impulse, but frequently the act is deliberately planned. It is a common tendency in depression, and should be anticipated. A mild depression, unrecognized, may so exaggerate rather ordinary obstacles that suicide is attempted without apparent provocation. The mind in health instinctively revolts against the thought of self destruction; but in psychosis, the general mass of "feeling" may be so altered that depressive emotions dominate and activate the entire organism. Thus a woman of unusual refinement made repeated attempts to end her life, after a tragic failure to meet a difficult situation. She seemed entirely rational as she begged for permission to destroy herself. She stated apologetically that she realized the implication of professional dishonor in asking a physician to allow or further such an act, "But", she declared. "I feel that my soul is lost, and I can see no other way out. Why, I once loved the sunshine and the birds and the flowers, but now these things are actually painful, as they make me feel my unworthiness."

Rare, indeed, is the man or woman who has not suffered some "wound of the soul", which, though healed, has left a tender scar. If such a one is blessed with a wise and tolerant philosophy of life, he more easily survives his conflict, and finds new outlets for his interests. But the degree of this sublimation will depend upon the constitutional factor and the results of experience and training. If education has been directed to the development of emotions and intellect alike, repression is not necessary, as the emotional energy is finding expression in harmonious and successful adaptation.

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DISCUSSION

M. C. HOWARD, M. D., (Omaha): I think Dr. Dishong has given us a paper which should call for some discussion. I really believe most of you will agree possibly 25 per cent of the patients coming into our offices have a mental condition in addition to the physical symptoms which they present. A great many patients have very few physical findings. After we are through with our x-ray and special tests, we are about in the same position as when the patient first entered our office. There is no definite line of procedure as regards medicine or surgery.

I am sorry to say quite a few of these patients have been circularized. When they come into your office or mine, there isn't much to be done other than to sit down and see what is the mental difficulty which has hold of these patients. I really believe this is the type who should be given every consideration on the part of the medical profession. This is the type of patient, as Dr. Dishong brought out, who is rushing to these so-called "cures," frequently coming back and ridiculing you for not being able to help them when all they had to do was to enter this clinic and have this or that nerve pressed on.

Dr. Dishong's paper is worthy of discussion for the simple reason we have these cases and are willing to get rid of them, when we should keep them and do everything possible to bring them out of this mental state of oblivion into which they have sunk.

T. L. HOULTON, M. D., (Omaha): I did not get to hear the paper, but had the privilege of reading it the past week. I think it was interesting because of the fact it so closely associates the physical and the mental. That is a thing, in my mind, which has made most advancement in the last fifteen years. Previous to that, it was hard to get a medical man to make any sort of an examination of a mental case. Such cases were not put in general hospitals, because they had no facilities to take care of them. Now most of our large general hospitals have a psychopathic department where mental cases can be kept for a comparatively long period of time. When you are in contact with most of your men—surgeons and eye, ear, nose, and throat men—you can ask these men to examine a mental case. If they had to drive fifteen miles to a hospital in an outlying district, this was not done.

They are beginning to find mental diseases are based upon physical disorders which lie in infection and imbalance of the vegetative system, and disturbances of the endocrine system.

There are now some tests by which you can tell from physical diseases what type of mental disease a person is liable to develop, and from the mental disease, what type of physical disease he will develop. Take the types that were introverts. They develo pinto dementia praecox and develop tuberculosis in early stages.

I read an article by Newman who has certain tests. He can tell whether a person is an extrovert or introvert, and he has found introverts develop tuberculosis rather frequently.

Dr. Menier comes with the theory extroverted types develop cardiorenal vascular diseases. Extroverts will probably develop a physical disorder of the heart, blood vessels, or kidneys. Introverts will probably develop some chronic diseases. Usually we can tell the kind of psychosis he will develop. If we know his past mental history, we know what physical diseases to combat.

Dr. Dishong spoke of the milder psychoses and neuroses connected with physical disorders. I want to name a few major psychoses. Take first, the toxic psychosis. Second, the luetic psychosis. Third, the arteriosclerotic.

So much has been said about influenza in connection with mental diseases. Certain men have brought out the fact a lot of people who have influenza develop a mental disorder.

I think Dr. Dishong's paper was interesting, if for nothing more than the material and the title, and the association of mental disorders with physical.

DR. DISHONG, (closing): I want to thank Dr. Houlton and Dr. Howard for their discussion. I purposely refrained from citing too many actual cases, because I knew you had seen them. I want to cite one case briefly—a man of middle age, hard-working, who became run down in health and unable to sleep; had no appetite. He was being treated for various physical ailments, including low blood pressure and possible gastric ulcer. We succeeded in giving him insight into the situation and relieving his mental depression at a time when he was really suicidal, and had been out of work several months. He is carrying on successfully and has his health because of co-operation between all the so-called "specialists" combined.

Medical Professor: "Where is the glottis?"

Student: "I don't know, sir. I think you put it on the shelf in the dissecting room with the rest of the surgical instruments."

UNDULANT FEVER*

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During the past five years undulant fever has been brought to the attention of the medical profession by the work of Evans, Hardy, Simpson, Carpenter and others. Two years ago Dr. W. A. Reeder and myself reported one of the first cases known in this state. Since then Hardy, Buis and Waite have added very largely to our knowledge of this disease by their articles published in the *Nebraska State Medical Journal.* It shall be my endeavor to add to the sum of this knowledge by detailed accounts of seven patients of this type who came under my observation during the past few years.

Case 1. Mr. S., age 30, foreman of hog coolers in a local plant. On October 10, 1929, he stated that for four weeks he had been losing weight, coughing, had occipital headaches and vague pains throughout the body. For two weeks previous to my examination he had had chills every afternoon. These chills, though slight in character, would continue to the time he retired. On going to bed he felt more comfortable but as soon as he fell asleep he would break out in a drenching perspiration of such severity that he was forced to change his garments several times during the night. On awakening in the morning he felt languid, due to body pains and a general tired feeling. Physical examination showed a thin male, blood pressure 130/90, pulse 84, temperature 103°. Nose and throat negative. Heart sounds normal. At the base of the lower right lung a few moist rales were perceptible. The abdomen showed nothing unusual except a palpable spleen. Laboratory findings: X-ray plates of the chest were negative save for a heavy hilus. Hg. 80, erythrocytes 4,200,000, leucocytes 8,650. Polymorphonuclear cells 50, small lymphocytes 35, large lymphocytes 15. Agglutination tests for Brucella melitensis positive 1-2560. Widal negative. The clinical course of this patient's illness continued over a period of seven weeks from the time I first saw him. The chills subsided soon after he was put to bed, but the evening temperature was as high as 104° during the first few weeks. The morning temperature was normal. The drenching perspirations gradually decreased and entirely disappeared during the last three weeks of his illness. The treatment was entirely suportive except three intravenous injections of acriflavine.

Case 2. W. C. (Dr. C. J. Shramik's patient), age 37, foreman of the ham department in a local packing house. Five weeks before consulting a doctor he noticed a general malaise. This was present most of the day, but increased to such an extent that at night he was forced to retire early. Shortly after going to bed he would suffer a slight chill for about fifteen minutes. This was followed by a feeling of warmth, after which he would begin to perspire. These symptoms occurred each day, and became so severe that he consulted his doctor. He was now complaining not only of the above symptoms, but also of an intense burning sensation in the upper abdomen. Physical examination showed a poorly nourished male. Pupils react to light and accommodation. Nose and throat negative. Heart and lungs negative. Abdomen: Tenderness in both upper quadrants. Liver not palpable, but spleen was enlarged. Joints negative. Hg. 80, erythrocytes 4,320,000, leucocytes 6,300, polymorphonuclear cells 69, small lymphocytes 13. Agglutination tests for Br. melitensis positive 1-1260. This patient ran an intermittent temperature from 99° to 104° for about thirty-six days with the evening temperature falling by lysis. The chills stopped shortly after he was hospitalized, but the sweating continued for several weeks. He was given large doses of acriflavine intravenously by Dr. C. J. Shramek with apparently good results. He was totally disabled for a period of sixty-two days. At the present time he has regained his usual weight, but still feels that his strength is not what it should be.

Case 3. C. K. (Dr. H. T. Allingham's patient), age 33, boiler-room foreman in a packing house. About September 5, 1929, he began to complain of pains in his ankles and occipital headaches. This was followed in a short time by general body pains and a tired feeling. He states that as the disease progressed his body pains on the whole became more severe, but after he had worked for several hours each day the pains seemed to diminish. In the afternoon he would lose strength, and in the evening would be forced to go to bed rather early. Shortly after retiring he was seized with a chill, that lasted for fifteen to thirty minutes. On falling asleep he would begin to perspire, freely and heavily, although as long as he was awake he did not perspire. The above symptoms were rather pronounced at the time he called his doctor. The patient's chief concern at all times centered round the joint pains, the chills and the drenching sweats. His appetite was good during the course of the disease and he developed no further symptoms. Physical examination: A fairly well nourished male; nose and throat negative; heart and lungs negative; abdomen negative other than an enlarged spleen; ankle joints painful but not swollen. Laboratory findings, urine negative, agglutination of Br. melitensis positive 1-2560. The clinical course of this patient's illness was the same as in Case 2. He was totally disabled for sixty-three days. The treatment was expectant and of a supportive nature. At the present time the patient has regained his normal weight, but he is still weak.

Case 4. S. M. (Dr. N. J. Everitt's patient), age 29, a pork-loin trimmer in the packing house. He first became ill on January 1, 1930, complaining of sore throat, coryza and malaise. On January 7, 1930, the patient developed an abscessed tooth. This was removed. That evening he had a severe chill and was seen by Dr. Everitt on January 8. At this time he complained of pain in the lower right chest with findings of an active infection. The temperature remained constant until January 14, when it returned to normal. That night his temperature rose to 102° and the right lower lobe gave signs of renewed activity. On January 22 the upper left lobe was affected. The temperature remained high and the patient was removed to the hospital on January 27. At this time the physical findings in the lower right chest were clearing. The patient was having chills and sweats with a constant high fever. Other than the lung findings the only positive factor was an enlarged spleen. Laboratory; urine negative; Hg. 70; erythrocytes 4,060,000; leucocytes 6,800; polymorphonuclears 61; small lymphocytes 38; Widal negative. Agglutination for Br. melitensis positive 1-640; blood cultures negative; sputum blood-tinged, but negative for any definite organism. X-ray plates taken on January 28 showed the upper left lobe clouded. On February

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3, the x-ray plates showed the lung fields clear except for an increased hilus. From January 27 to February 19, the patient's temperature varied between 101° and 104°. He was very toxic, his abdomen was greatly distended and at times he was incontinent. This patient has had a very stormy course and is the only one in the series who had such severe pulmonary symptoms. When examined on April 9, 1930, he was still running an afternoon temperature and is still confined to bed. He has been totally disabled for ninety-nine days. His gastro-intestinal symptoms are not severe, but he still complains of distention and loss of appetite.

Case 5. Mr. H. T. (Dr. L. D. Dieter's patient), a robust farmer, age 32, was seen by his doctor on July 14, 1929. At this time he complained of generalized headache, chills, fever and profuse perspiration. He added that he had not been feeling well for some time. During the spring his milch cows had aborted. The foetuses were thrown to the hogs. The pregnant sows then aborted. While cleaning out the uterus of one of the infected cows he scratched his hand. The hand became swollen, but did not suppurate. Shortly after this he noticed that he did not have his usual strength, and had remarked to members of his family that he thought his system had been poisoned from the infected hand. On July 14, 1929, he had his first severe chill followed by a drenching perspiration. Dr. L. D. Dieter was called and the above history was elicited. Physical examination: Head and neck negative; nose and throat negative; chest negative; abdomen negative; widal reaction negative; leucocytes 5,480. Agglutination of Br. melitensis positive 1-640. This patient continued to have severe headaches, daily chills, rise in temperature and night sweats. He was under Dr. Dieter's care until August, when he entered the hospital and the above findings were verified. Two days later all symptoms suddenly ceased. He is the only patient in whom the afternoon temperature did not end by lysis. He was kept under observation for two weeks. At the present time he still complains of some headache but none of the other toxic symtoms have returned.

Case 6. W. M., age 49, a stockman, consulted Dr. W. J. Reeder on October 14, 1927. At the time he complained of general body pains, muscle soreness and loss of strength. These symptoms had been present for at least six weeks. During this period he had attempted to do his usual work but it had become impossible. On October 19 the patient was confined to his bed complaining of cramping pains in the abdomen, distention and inability to move his bowels. He was carrying an afternoon temperature, was having severe chills and heavy perspiration. The physical examination showed only a distended abdomen and an enlarged spleen. The laboratory findings are as follows: Widal negative; the urine was clear and the leucocyte count showed a leucopenia. The patient's general condition became worse; he developed a pain in the right chest, a slight cough, pain in the lower right quadrant and pain in the right ankle, the right knee, the left shoulder and a crushing type of lumbar bachache. The patient was hospitalized on October 27, 1927. The physical examination was as follows: Nose and throat negative; heart negative; lungs, at the lower right base there was some dullness with a few moist rales; abdomen was slightly distended with tenderness in the lower right quadrant; spleen palpable. The affected joints were painful but there was no loss of motility or sign of swelling. He still complained of a crushing type of pain in the lumbar area. Laboratory; urine negative; Hg. 70; erythrocytes 3,648,000; leucocytes 8,450; polymorphonuclear cells 60; small lymphocytes 24; large lymphocytes 14. The widal, urine, stool and blood cultures were negative.

In view of these findings Dr. Reeder and I considered undulant fever as a probable diagnosis. Agglutination with Brucella melitensis was positive 1-5120. The patient ran an intermittent temperature for fifty-six days while in the hospital. During this time there were seven days during which he had a marked reduction in his afternoon temperature but the infection again returned to its former virulency. These periods of apyrexia give to this disease its name undulent fever. In addition to the above symptoms the patient developed a right sided orchitis while in the hospital. He is the only patient in the series who had this complication. At the present time he has regained his usual weight, but still has some joint pains and is not quite as strong as he formerly was.

Adenda: While convalescing in the hospital the patient gave the following information. About September 1, 1927, he was using a scraper in his hog pens. The day was very warm and there was considerable dust. Several days later he began to tire readily and his body ached. He thought these symptoms were the result of a cold and tried various home remedies with no result. His condition remained much the same until he was confined to his bed. He also added that no milch cow had ever aborted on his farm, nor does he know of any such disease among his hogs.

Case 7. H. K. (Dr. J. J. Freyman's patient), age 31, an employee in the hog yards in Omaha, first came under my observation November 9, 1926. He stated that for a month he had been unusually tired, especially in the evening. He had suffered from aching pains throughout his body, but there was no localized involvement of any joint. For two weeks his appetite had gradually lessened and he was running an afternoon temperature. During the last week he had severe chills on going to bed, which were followed by drenching sweats. These occurred each day. He had a slight cough with some expectoration. During the early course of the disease he had a generalized headache, so intense at times, that one thought of a meningitis. The patient was hospitalized for a period of thirty-two days. During this time the chills and sweats gradually diminished while the fever fell by lysis. This patient's general condition gradually improved, but up to the present time he still complains of weakness. Physical examination; nose and throat negative. Heart and lungs negative. Abdomen; no tenderness, but spleen enlarged. Extremities negative. Laboratory findings; urine negative; Hg. 80; erythrocytes 4,780,000; leucocytes 6,900; polymorphonuclear cells 60, small lymphocytes 28, large lymphocytes 11. Widal reaction negative. Blood, urine and stool cultures negative. X-ray plates negative for any active pulmonary pathology. No agglutination test for Br. melitensis but a review of this patient's history forces me to consider him as belonging to this group.

COMMENT

Occupation: Up to the present time undulant fever has been considered as a milk-born infection. Hardy (1) in his work expresses the belief that this is the source of infection in the majority of his cases, although he adds that direct contact with diseased animals should be considered. In reviewing these seven case-reports we find that four of the patients work in the hog department of local packing houses, one in the boiler room of a packing plant, while two are stock men. Three of the patients who worked in the packing house came directly in contact with freshly killed hogs; the one working in the boiler room was exposed at times to remote contact with these animals and the fifth patient was working in the hog yards. Of the two stockmen, one apparently caught a direct infection from an aborting cow, while the other places his infection at the time he cleaned his hog pens.

All these patients except one state definitely that they drank whole milk; other members of the families drank milk from the same source with no bad results. As five of these patients live in Omaha, the raw milk which they drank came from various cows. If one cow was badly infected, this milk would be so diluted that the probability of infection would be greatly diminished. If all the cows in one dairy were infected we should have more infections among those using the milk.

In considering undulant fever the question of direct contact may be a factor in its dissemination. In the above reports we find six of the seven patients coming in more or less direct contact with hogs. Whether this is a coincidence or not remains to be seen. It is a striking fact that I have not encountered one patient with undulant fever who works in the sheep or cattle departments of the local packing houses.

Symptoms: In questioning the patients one is impressed by the insidious onset of the disease. They imagined that they had merely caught a cold or a slight infection. Invariably they had used some home remedy or proprietary drug for the aches and pains in the early stages of the disease. As the infection progressed over a period of weeks, more severe systemic symptoms as chills, fever, and sweats showed themselves. Anoxeria becomes prominent with a loss in weight. The patients became alarmed and sought medical advice. In all cases the initial symptoms were stressed, but the patients were prone to emphasize one group of symptoms referable to this or that part of the body.

Physical Examination: The symptoms when the patients were first examined were somewhat misleading. Three of the series (case report one, four, six) had findings of pulmonary pathology. The findings did not coincide with the severity of their symptoms except in one case (four). The gastro-intestinal complaints in two patients (case reports two and six) did not measure up to the systemic symptoms present, while the same may be said of the two patients (case reports three and seven) who complained principally of joint or body pains. In the examination of individuals suffering from this disease one is impressed by the scarcity of physical findings in the typical case. The one physical finding that was present in the above patients was a palpable spleen. When found with the above major symptoms and minor physical findings one must consider undulant fever as at least a possibility.

Temperature: Six patients in this series ran an intermittent temperature. By this I mean that the early morning temperature was normal or near normal with a gradual rise in the afternoon to 104°. This was true of all the patients except one (case four), who ran a fairly constant temperature for twenty-three days even though his pulmonary findings had diminished both on physical examination and on the roentgenograms. The other patients continued to have the afternoon rise in temperature for a period of weeks. An interesting feature of the temperature curve was the fact that as the disease ran its course the daily elevations occurred later each day. In all of these reports we find the febrile manifestations ending by lysis except in one (case five). His fever dropped to normal in twenty-four hours and remained at this level. The patients when examined early are frequently unaware of the temperature they are carrying.

Roentgenographic Reports: Five of the patients had roentgenograms of the chest. Other than a report of increased hilus shadows, all were negative, except one (case four). This patient at the time he was hospitalized had a definite clouding of the upper left lobe. Four days later this was reported as clear.

Blood Findings: The blood counts are of some diagnostic value, due to the uniformity of the findings. These blood counts were done in two different hospitals and rarely by the same technician. The haemoglobin readings (using a Dare haemoglobinometer) were from 70 to 80. The erythrocyte count ranged from 3,648,000 to 4,780,000. These high values may be accounted for by the loss of water volume associated with the drenching perspirations. The leucocyte count remained between 5,480 and 8,640. The differential count of one hundred cells gave the polymorphonuclear cells as 50 to 68 percent. The small lymphocytes as 35 to 18 percent. The large lymphocytes and the large mononuclears constituted the remainder of these cells.

Agglutination Tests: In all the patients the blood serum gave a negative widal reaction. The agglutination tests against the Br. melitensis were positive in all but one patient (case 7) in titers from 1-640 to 1-5120. It is important to mention that a number of workers (2, 3, 4) are reporting positive agglutination of this organism in apparently healthy individuals. These positive agglutinations are in the low titers (1-40 to 1-320). Hence this information should be given some consideration in appraising laboratory reports. On the other hand Evans (4) and Carpenter (5), working independently, have reported negative agglutinations in three melitensis patients where the diagnosis was made by positive blood cultures of the specific organism (Br. melitensis).

Diagnosis: In studying the above case reports one is impressed by the following facts: (1), the insidious onset and variety of symptoms over a period of weeks; (2), the daily afternoon temperature with the nocturnal chills and drenching perspiration; (3), the paucity of constant physical finding other than a palpable spleen; (4), the low leucocyte count with an increase in the small lymphocytes; (5), the positive agglutination of the Br. melitensis in high dilutions.

Differential Diagnosis: There are a number of diseases which may be confused with undulant fever. Typhoid fever, tuberculosis, malaria, malignant endocarditis, and tularemia may simulate this disease. This fact should be considered. Tularemia is the only disease where the blood serum is capable of giving positive reactions with Brucella melitensis. Francis and Evans (6) have studied the cross agglutination of the Br. melitensis and the Bacterium tularense. They arrive at the following conclusions:

> "1. Serums from suspected cases of tularemia and undulant fever should be tested for agglutination of bact. tularense and Br. melitensis, unless the clinical history points definitely to a recognized source of infection for tularemia or undulant fever.
>
> "2. A serum which shows a marked difference in titer for bact. tularence on the one hand and for Br. melitensis on the other, can usually be classed by the higher titer as due either to tularemia or to undulant fever.
>
> "3. A serum which agglutinates both species of antigen to the same or nearly the same titer should be subjected to agglutination absorption tests."

Treatment: The treatment of the patients in this series was entirely supportive except as reported in cases one and two. Acriflavine according to the method of Hoffman (7) was used. We feel that the therapeutic response was somewhat effective and the convalescence of the patients in the afebrile stage was more rapid. Simpson (2) and Harbinson (3) have reported good results with vaccines made in their own laboratories.

SUMMARY

The critical analysis of the above case reports was made in the hope of giving a wider diffusion to another aspect of this disease and was possible through the cooperation and courtesy of the doctors mentioned in the reports.

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DISCUSSION

HERBERT H. WAITE, M. D. (Lincoln): This paper has been particularly interesting to me from the standpoint of the source of infection. At Christmas time I was present at a meeting of the Society of American Bacteriologists, at Iowa State College, at Ames, Iowa. One thing which has an especial bearing on the cases reported today was brought out at this meeting through reports of work on cattle from several states. Blood from hogs, slaughtered in a local plant in New York, was subjected to the Health Department for agglutination tests. The number from Nebraska which were tested was relatively small. About 70 per cent of that number, however, showed agglutination for the porcine variety of the Brucella melitensis. The average percentage for the rest of the states was 2.36. Some of the other middle western states had a higher positive agglutination reaction than the average.

As to the mode of infection, more and more cases are reported where infection occurs through wounds, and particularly from hogs—from hogs which have aborted. A veterinarian at Ames reported a case communicated in this way. The same thing is true as far as cows are concerned.

A number of cases of undulant fever have been reported which were contracted through taking care of aborting cows, nevertheless milk still remains the most important source of infection.

I wish Doctor Howard had told us something about the types of Brucella encountered. We may have infection either bovine or porcine. Not infrequently cows have porcine infection, and hogs have bovine infection It is a matter of importance to find out by laboratory tests which type of Brucella is causing infection, since those of porcine origin are more severe than are the bovine infections, the latter being the least virulent of any. Examination of serums from 530 persons drinking raw milk from a single herd, in which 54.6 per cent of the animals were infected, showed 13 per cent which gave specific agglutination tests for Brucella of the bovine type. This work was done at Cornell University. Drs. McAlpine and Mickle have typed out a considerable number of different forms. Dr. Huddleson of the Michigan State College believes he is able to separate three different main types of Brucella through growth on a medium containing different dilutions of certain anilin dyes. Others who have followed his methods do not agree with him.

LUCIEN STARK, M. D. (Norfolk): It has been my good, or bad, fortune to have had five of these cases come into my hands. In the main they presented the same symptom program as the one outlined by Dr. Howard. On a physical examination about all that you will find is an enlarged spleen. The white count remains at normal or below. In only one of mine did it go up at all. An enlarged spleen, high temparture, a white count remaining low even with a temperature of 104° or more, added to the analagous story told by all of the patients will suggest an undulant. If they do have a leucocytosis there will be a relative increase in lymphocytes. The poly's nearly always remain the same.

My first case was a little boy nine years old. He presented the symptom group as related above. His doctor and I quizzed his parents closely and found that they had had several cows abort as well as five hogs. We withheld judgment until the laboratory work was completed and it confirmed our clinical diagnosis of undulant fever.

I tried out intravenous acriflavine on this lad and did not seem to get anywhere. I then grew the organism and found that it is a gram negative and as I had some good results in other gram negative infections with gentian violet intravenously, we used it on him. We used 22.5 ccs of a one-half of one per cent solution per hundred pounds of body weight. He immediately began to improve and within a period of seven weeks was apparently completely recovered. These injections were given twice a week and the distance between the high spikes on the chart became further and further apart as time went on.

The other cases were all treated with gentian violet solution and all ran about the same course. Whether or not the gentian violet was responsible for the improvement, I would not like to state, but they did improve and eventually get well and in a shorter period of time than by any other method now in use.

There is this one idea that should be a fixed one with all of us and that is, do not put all your faith in laboratory procedures for the diagnosis of undulant fever. The clinical signs must be present. There have been cases where the blood agglutinated the organisms in a dilution of one to five hundred forty and they had no clinical symptoms whatsoever.

My cases are all apparently well and I hope that they remain that way and I do believe that if I see any in the future, the gentian violet solution will be given and I think that with all of our cases, it is at least worth a trial.

H. W. BENSON, M. D. (Oakland): I think the value of this paper lies in the fact it brings to the mind of us general practitioners a thing we have probably overlooked in the past. As I look back over the last twenty-five years, I think I can see where we had types of this years ago. A great many recovered spontaneously and may carry the serum many years and still give a test of one to 540.

What I want to stress is this: When we send a specimen for laboratory agglutination and get a response of undulant fever, we may be led into the error of assuming that is all that is wrong with the patient. Therein lies our danger. Perhaps there may be some other definite or indefinite condition that merits our attention more than the undulant fever. For instance, we may overlook in a child an incipient tuberculosis. They drift for quite awhile. Co-incident with it, you may have an undulant fever reaction. Those are chronic.

An acute case can scarcely escape detection in this day and age. It may take a long time to prove you have undulant fever. I had a case two years ago—a missionary from China. They attempted to recover the organism and failed. I failed to do the patient any good. Just recently I have a report on this case. They have recovered the germ from the blood. It was interesting to know in this town in China all the milk was boiled. I feel as if we should not develop melitensiphobia, but I think we should be on the qui vive to look up and find these cases.

DR. HOWARD (closing): I wish to thank Dr. Waite for his kind discussion.

I am sure we should consider Dr. Stark's method of treatment as a possibility in this disease. In the case reports, I showed the individuals were incapacitated for a period of sixty to ninety-nine days. That is an economic loss to a family which cannot be overcome very easily. If there is any therapeutic method of attack which you have for undulant fever, in all fairness to the men here, it should be given.

I want to reiterate what I stated in the paper—that approximately five per cent of those individuals coming in contact with animals will give fever agglutination in low downs against this organism. A positive agglutination—one to 40 to one to 320—does not spell undulant fever. On the other hand, you must remember what Dr. Carpenter and Dr. Evans have done in agglutinating this organism.

I think we will see more cases. It may become known as an occupational disease, and may come under the compensation laws for those individuals working in packing houses or such places.

POSTOPERATIVE PULMONARY COLLAPSE

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CASE I

Patient: R. G. Age 25.

This patient was seen in consultation with Dr. C. R. Kennedy forty-eight hours after operation (March, 1929) for interim appendix disease. The first thirty-six hours following operation was uneventful, and at eight p. m. the temperature was recorded as 96.6; pulse rate 100 and respiration rate 32. At six the following morning the temperature was 104; pulse rate 136 and respiration 40; and at ten a. m. 101.4-146-42, and it was at this time that I saw him. The white count which had just been taken was 26,200. He was restless and somewhat cyanosed. He had no pain and there was little cough. The striking finding was the immobility of the right chest and the marked transmission of the heart tones to the right. The entire right chest except the apex showed a definite impairment of resonance. No rales were heard and the breath sounds and voice sounds were not transmitted to the ear through the stethescope; and no tactile fremitus was felt. The left chest was hyperesonant throughout. Massive pulmonary collapse was suspected and an x-ray ordered. The following x-ray report was given by Dr. Carleton B. Peirce:

"Stereoscopic films of the patient lying in bed, with the mobile unit, demonstrate an absence of the heart shadow from all but a small medial basilar portion of the left thorax. The lung fields on the left are, if anything, increased in their aeration. The trachea, together with the mediastinum and heart, is displaced beyond the midline into the right thorax.

There is a small amount of air in the right upper lobe. Below the first rib anteriorly and extending almost to the third rib anteriorly there is a triangular area of increased density, which from its architecture and position we would interpret as an atelectatic right upper lobe. There is a further small amount of air in the right lower lobe. The diaphragm. together with the liver, has been displaced upward, so that it now presents its dome in the fourth interspace anterior. This has been the result of loss of intra-thoracic pressure on this side by virtue of the atelectasis. Our findings, therefore, would indicate a block partially of the bronchus to the right upper lobe and the right lower, with no apparent complete block of the right middle main bronchus.

"Stereoscopic films of the thorax demonstrate a normal level and contour for the right dome of the diaphragm, a slight amount of thickening in the inter-lobar septum between the middle and lower lobes, and a moderate degree of thickening of the structures about the root of the lung. The heart is in a normal position. This would be considered as a fairly healthy thorax at this time. This would corroborate our previous impression that his difficulty at first was that of a mechanical atelectasis. March 26, 1929."

After the roentgenization the patient was turned on the right side and the right lung percussed. In a few moments a "goodly" amount of greenish mucous was expectorated and the patient became entirely comfortable. The next day the leucocyte count was 6,500 and the patient went on to a normal recovery. The x-ray taken forty-eight hours after the first picture shows practically complete recovery, as the report of Doctor Peirce proves.

This young man left the hospital ten days after operation, none the worse for his experience with post-operative atelectasis. That he would have, been much less fortunate had this not been suspected, proven and relieved, is very probable.

CASE II.

Mrs. A. S., age 52; height 5 feet, weight 170.

This patient was a strong, well German woman, the wife of a retired farmer. She had always been well until two years ago when she developed what was regarded as an acute appendicitis. When first seen I regarded a perforation of the appendix as probable. She was immediately removed to the hospital where a median incision was made. The appendix had ruptured and drainage was instituted. The recovery was uneventful, but about six months later a post-operative ventral hernia was evident at the site of the operation, and a repair was advised.

She did not consent until February, 1930, at which time she consulted Doctor L. O. Hoffman and myself. Pre-operative examination showed no contra-indication for surgery, except overweight. The heart and lungs, blood pressure and kidneys were normal. No x-ray examination of the chest was made. She was operated upon February 20th, 1930, at eight a. m. by Doctor Hoffman. The large hernial defect was closed and a Penrose drain was inserted through a stab wound. Nitrous oxid and ether were used and she was on the table about one hour and fifteen minutes. The first thirty hours post operative was uneventful except for the common complaint of backache. At five o'clock p. m. of the second day she rather suddenly complained of difficult breathing. The pulse rate was 125; the respiration 32, and the temperature 99.8. During the night the nurse recorded difficult respirations when she moved. I saw her the following morning—forty-eight hours after the operation. At this time there was some cyanosis and marked dyspnoea, no fever and little cough. There was a very definite impairment of resonance of the entire left lung, except the apex. No breath sounds were audible, and the left chest seemed fixed. Resonance was normal over the right chest and there were rales at the right base. Post operative massive collapse was suspected and an x-ray ordered. The report of Doctor Charleton B. Peirce is as follows:

"Study was made at the bedside, of the patient's thorax. This presented a gross accumulation of air in the cardia of the stomach and the splenic flexure of the colon. The diaphragm with the gas-filled stomach beneath it reached the fifth rib posteriorly and the second anteriorly. Above this there was a small amount of relatively aerated lung which we would interpret as the upper lobe, with a density at the hilum continuous with that on the right side which we would interpret as collapsed lower left lobe. In the right thorax there was observed a relatively homogeneous mass showing two roundish portions in profile at about the anterior axillary line. Lateralward there was aerated lung but definitely diminished aeration. The diaphragm is visualized at the level of the eighth rib.

Our interpretation is that at the time of onset of the terminal difficulty there occurred an occlusion of the left lower main bronchus with resultant atelectasis of the left lower lobe. Incident upon that respiratory difficulty the patient gulped air contributing to the gastric dilatation. Following this, in the absence of a cough reflex an accumulation of mucus in the right bronchus contributed to a diminution in aeration of the right lung which permitted the distended stomach to displace the heart, mediastinum and collapsed lower left lobe into the right thorax, increasing the respiratory embarrassment.

Atelectasis of the left lower lobe.

Gastric dilatation. Partial atelectasis of the right leg lung.

Mediastinal displacement.

Feb. 24, 1930."

Postural treatment and inhalations of CO_2 and O had no effect whatever—the condition becoming gradually but progressively worse—and the next day Doctor J. B. Potts did a bronchoscopic examination. Tenacious, molasses-like mucus was removed from the right bronchus; but the left bronchus seemed completely occluded one inch below the bifurcation. Doctor Potts described the obstruction as a red mass which pulsated markedly, and he felt that this mass was either the heart or possibly aneurysm. The x-ray picture was entirely atypical—as the mediastinal structures pushed away from the side where the chief collapse showed clinically. (This will be explained by Doctor Peirce in his discussion).

The patient seemed to breathe more easily after returning from the operating room, due probably to the removal of mucus from the right bronchus, which probably improved somewhat the atelectasis in a portion of the right lower lobe—as nothing was removed from the left bronchus.

This case was, in our opinion, one of double massive collapse, with the major collapse on the left side. The apparent improvement after the bronchoscopic treatment was short; the pulse became more rapid; respirations more labored; cyanosis more marked and the patient sank into a coma and died about five hours later. Unfortunately, a post mortem was not obtainable.

MASSIVE PULMONARY COLLAPSE

By massive collapse, atelectasis or a pneumatosis, is understood the deflation of large portions of lung tissue to a retracted airless state. This definition is given by Herman Hennell in the Archives of Internal Medicine, 1929. Dyke and Sosman, in the *Journal of Surgery, Gynecology and Obstetrics*, 1929, give a longer, more descriptive definition of post-operative pulmonary collapse, which is as follows: "A reaction of an obstructive nature in which the affected part of the lung becomes airless, characterized by displacement of the mediastinal contents to the involved side; decreased radiability of the affected lung tissue; a high diaphragm and flattened chest on the same side; increased respiration and pulse rate; cyanosis and usually a rather abrupt onset within twenty-four to forty-eight hours after an operation".

Pulmonary collapse was first observed by Pasteur in 1890, who described it as a complication of nasal and pharyngeal diphtheria; and later he first reported it following abdominal operations.

The more recent literature cites many case reports, particularly of the post-operative type: Non-penetrating injuries of the thoracic wall; acute diaphragmatic pleurisy and pneumonia; neoplasms; blood clots from hemorrhage from a tuberculous focus, and foreign body bronchial obstructions are the more common causes. Foreign body obstruction has been studied extensively by Chevelier Jackson and his associates at his bronchoscopic clinic, where they have bronchoscoped hundreds of such cases. Blake and Cecil have appeared to have established a bronchogenic origin of pneumonia in monkeys; and indicated that invasion took place at the root of the lung and spread thence throughout a lobe by way of the interstitial framework and the lymphatic system.

Coryllas and Birnbaum believe that pneumococcic infection of the bronchial tree is not sufficient to produce lobar pneumonia, and that occlusion of a bronchus by the exudate is also necessary. Crisis or lysis, in their opinion, is due to the disintegration of the fibrinous exudate and sudden liberation of a large bronchus—thus allowing a rapid drainage of the affected side. If the liberation is complete, then we have a decline of the fever by *crisis;* and if gradual, *lysis*. If bronchial blocking persists, then greater alterations of the bronchi and lung follow—thus explaining delayed resolution or post-pneumonic abscess.

MECHANISM

Early observations were made in the new born infant; so-called congenital atelectasis. A frequent form is due to accumulated secretions occluding the bronchial tree and preventing the normal inflation of the lungs. The obstetrician often restores normal respiratory function by aspirating these secretions. Congenital atelectasis is also found with congenital syphilis or with lesions of the central nervous system.

There are three main groups, according to Hennell: First, cases in which gross bronchial obstruction is the manifest cause of the condition. Second, cases in which the primary factor is an interference with the proper respiratory movements with which is associated increased bronchial secretion and a suppression of the cough reflex. The accumulated and retained secretions eventually lead to bronchial occlusion with resulting collapse. Third, cases in which extra bronchial pressure leads to partial stenosis—the complete occlusion being due either to mucosal turgescence or to bronchial spasm, associated with plugs of retained inspissated secretions.

Type I is usually a foreign body and is best treated by the bronchoscopic route. Type III, due to pressure from without—such as aneurysm or pulmonary neoplasms—may be represented by my Case No. II, as there was bronchoscopic suspicion of an extra bronchial mass. Type II is the more common type and is represented by my Case No. I, that is, *post-operative pulmonary collapse,* which I wish to discuss chiefly. In this type the usual mode of production is the obstruction of a main or branch bronchus by tenacious mucus. Secondary causes are limited excursion of the *diaphragm* and thorax, producing a decreased *aeration* of the lung; and abolition of the cough reflex. This may be brought about by the too great use of *sedatives* either preceding or following an operative procedure. The type of operation does not seem to be a great factor, although a number of cases have been reported in kidney operations where the patient lies in a one-sided position continuously. Here the bronchial collapse usually occurs on the side on which the patient lies.

Dyke and Sosman report thirteen cases, and in ten of these the lower right lobe was involved. This can be explained by the anatomical difference between the right and left bronchi. The type of anesthetic seems to be no great factor, but the amount of time *under anesthesia* may be—as during anesthesia considerable portions of the lung are unventilated because of depressed respiration and shallow breathing. Because of this depressed respiration the bronchioles leading to the unventilated areas may become occluded by the accumulating secretions from their walls.

The air within the alveoli gradually becomes absorbed and subsequently they collapse.

Morbid anatomy. The affected lung tissue appears smaller than normal, is congested and reddish in color and sinks in water. The lung feels solid, is airless and does not crepitate. Tenacious, thick mucus is usually found in the bronchi. The capillaries are dilated and the congested smaller bronchioles are collapsed; while the larger ones remain of normal calibre.

Symptoms. The onset is usually about forty-eight hours after the operation, as it seems to take about that time for the air in the unventilated lung to become completely absorbed. There is a rise in temperature but not so high as in pneumonia. The pulse rate gradually rises with the fever and the respiration rate also increases. Dyspnoea may be a striking symptom. There usually is no pain. The patient looks sick and is apt to lie on the affected side, as in pneumonia; and the breathing becomes labored and jerky. The alse nasae may dilate with respirations. *Cough* is usually absent; there is little sputum and no blood. There is definite decrease in the expansion on the affected side and Litten's sign is positive. The affected side seems rather than larger as in pneumothorax. Tactile fremitus is decreased or gone, and if the collapse is complete no rales are heard. The percussion is impaired and the opposite side is hyperresonant, due to the compensatory emphysema. Breath sounds are suppressed or absent. The *heart* is *sucked* toward the affected side and if the usual right side is involved the tones are heard distinctly well over to the right.

X-ray. Studies show an increased density over the atelectatic area, a displacement of the heart and the mediastinal tissues toward the affected side and a high fixed diaphragm on the same side—doubtless due to the one-sided loss of intrathoracic pressure.

Diagnosis. Any pulmonary symptom developing within twenty-four hours following an operation should cause one to suspect pulmonary collapse. Pulmonary embolus, pneumothorax and post-operative pneumonia must also be considered; but a careful physical examination of the chest, including x-ray, should render the diagnosis clear. Of course, an actual pneumonia will probably follow atelectasis untreated.

TREATMENT

Preventive treatment. Haggard and Henderson stress the fact that prior to the inhalation of carbon dioxide and oxygen in the treatment of carbon-monoxide asphyxia pneumonia was a very frequent sequel; while in cases in which carbon dioxide has been used there is not a single report of a subsequent pneumonia. Carbon dioxide was introduced in surgical anaesthesia about the same time. The purpose of such inhalation at the termination of ether anaesthesia is the same as in carbon-monoxide asphyxia; namely to increase the ventilation of the lungs and thus hasten the elimination of the anesthetic after the completion of the anaesthetic; and thus prevent deficient aeration and mucus secretion plugging the bronchi, and ultimate collapse.

Forty to fifty per cent oxygen is advised for the same purpose by Judd and Passalacqua (*Am. Jour. Med. Sciences,* 1929) and many German clinics. It is more or less of a routine procedure in all general anaesthesias. Further preventive measures are: First, change of position of post-operative routinely every six hours; and second, curtailment of post-operative sedatives, which depress the cough reflex.

Treatment of the condition. First: Postural treatment, after the method of Santi (*J. A. M. A.,* 1927). Turn the patient so that the sound side is dependent with patient in a horizontal position or slight Trendelenburg; thus for a short time only, especially if lower lobe is involved, because secretions may plug a branch bronchus leading to the upper lobe. Encourage the patient to Cough and breathe as deeply as possible. Roll the patient from side to side and percuss the affected side lightly at the same time the patient is asked to cough. This is to be repeated at intervals, and as in my Case No. I, an increased expectoration is produced after the dislodgement of the mucus plug, and a dangerous condition is often changed to one of comfort and safety.

Second: *Bronchoscopic* treatment is often a great aid where postural treatment is not successful. In the hands of a competent bronchoscopist it is quite simple and there is no question but that some plugs of mucus too thick to be moved by posture may be *seen* and *removed* by *suction.*

CONCLUSIONS

1. Pulmonary collapse is more common than formerly thought.

2. Post-operative pulmonary collapse should always be considered when any respiratory symptoms develop about forty-eight hours after operation.

3. The diagnosis is quite definite if a careful chest examination, including x-ray is made.

4. The use of CO_2 or forty to fifty per cent

oxygen after anaesthesia should perhaps be used routinely.

5. We should consider whether *sedation* following all operations is good medicine.

6. Postural treatment should first be tried and if unsuccessful there should be no delay in using the bronchoscope.

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DISCUSSION

J. P. POTTS, (Omaha): From the viewpoint of a laryngologist as to the etiology of bronchiectasis there is always a collapse of the obstructed lung and not an emphysema. In my opinion this condition occurs too rapidly to be the result of absorption and I think it much more likely that the collapse is induced by mechanical means, that is, the bronchus tapers towards the base of the lung. The thick mucous of other foreign bodies tends to form a ball valve allowing the air to escape, but preventing its entrance into the bronchus. In this way a lung is soon pumped practically free of air. The prostration of the patient is much greater in a massive atelectasis following anesthetic and operation than that due to obstruction by a foreign body. Hence there possibly enters some element of infection along with it, which would be reasonable to expect with an obstruction due to muco-purulent secretions such as follows up an anesthetic. As a prophylactic all patients should be carefully examined before operation for upper respiratory infection. It is not likely that the normal throat and bronchus would be sufficiently irritated by a well given anesthetic to result in a section becoming sufficiently thick to cause obstructions. An appropriate dose of morphine and atropine should be of benefit as a preventative as it tends to reduce the reaction of the anesthetic on the bronchial mucous membrane. The most effective and surest way of relieving this condition is to pass a bronchoscope down the trachea and with a suction tube remove the secretions. This is only possible where a trained bronchoscopist is associated with the hospital. Under other conditions the treatment outlined by Dr. Bliss should be used.

ROY H. WHITHAM, M. D., (Lincoln): I want to thank Dr. Bliss for bringing the subject before us, for I think it is a timely one. His discussion has been so complete that very little can be added. This is a condition which occurs more commonly than it is recognized. I have had two cases that I have operated upon in which the collapse was complete on one side. There is just one other causal factor which Dr. Bliss did not mention in particular that I should like to emphasize, that is, a pre-existing bronchitis. I believe this is an important one for when bronchitis exists with a thick secretion we find collapse arising more frequently. It is just another reason why we should be particularly careful to take careful histories and make careful examinations before operations. In the diagnosis of the condition I should like to emphasize the importance of inspection. If one stands at the foot of the bed a massive collapse is usually evidenced by the dropping of the shoulder, the depression of the ribs and the lack of respiratory excursion on the effected side. Massive collapse should be considered in every case in which fever and cough appear after an operation.

RODNEY W. BLISS, M. D., (Omaha), (closing): There is a question whether sedation should be used before an anesthetic. Morphine and atropine certainly make the patient breathe more easily and decreases the amount of secretion in the bronchi. However, it does tend to abolish the cough reflex, and secretions in the trachea and larger bronchi may find their way more easily into the smaller bronchi, and there produce an obstruction. There are also reasons for sedatives after an operation. Pain must be controlled as much as possible. However, too much morphine is an important factor in the production of hypo-ventilation of the lung; and we should think of a post-operative pulmonary collapse as a possibility in every operative case. If we do this it is a relatively easy matter to turn on the oxygen for two or three minutes before the patient leaves the table. This will tend to hyper-ventilate the lung and make better aeration—and a lesser chance to later collapse.

THE RELIEF OF GENERAL EDEMA BY MEDICAL TREATMENT*

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As a general practitioner in a rather small community with no opportunity of independent research and infrequent postmortems I am dependent on visits to larger medical centers and on the literature for new therapeutic measures.

It requires considerable courage to employ some novel therapeutic measure when you have never seen it performed and depend entirely on didactic teaching. So it was with considerable concern that I first tried some of these procedures.

I offer the subject of relief of edema by medical measures from the standpoint of the man in the field, all scientific observations are gleaned from the various articles and text books, but I thought it might be a good idea to put all the, anyway to me, newer procedures in one article.

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*Read before the annual meeting Nebraska State Medical Association, Lincoln, Nebr., May 14, 1930.

The chief causes of general edema we find in general practice are heart disease and nephritis. The greatest cause of localized edema that we can benefit is cirrhosis of the liver.

We were formerly taught that dropsy in heart failure was due to kidney failure on account of low arterial pressure or high venous pressure and that digitalis raised the pressure and diuresis resulted; recent experiments seem to prove that digitalis does not raise blood pressure and may decrease cardiac output, and if the kidney were really damaged by anoxemia or congestion why should salyrgen which does not effect the kidney so far as can be seen, cause a terrific diuresis?

Without actual experiment a little reflection will bring out some fundamental truths about cardiac dropsy.

The first thought is that if the total amount of fluid in circulation was not increased by additions from somewhere, dropsy could not occur, for no matter how slow the circulation might be there would be plenty of room for it. This fluid is all poured in on the venous side, especially through the thoracic duct into the superior vena cava, the thoracic duct which is seldom if ever mentioned in heart disease but plays an important role.

For, if the onward flow of blood is slowed, what really happens is the inflow from the venous side is blocked and as this is being constantly augmented by fluid from the thoracic duct and the capillaries, and the kidneys do not eliminate it, in order to keep the specific gravity of the blood normal the fluid must escape into the tissues and cavities by way of the capillaries. No one can seriously think of fluid seeping through the wall of an artery or of a vein.

In cardiac dropsy specific gravity of the blood is constant. We must, to understand cardiac dropsy, look upon the venous system as a great reservoir of the blood which is fed into the arterial system and when more blood accumulates than can be handled by the failing heart the reservoir breaks its bounds and overflows into the tissues causing dropsy. The theory of tissue anoxemia is no explanation as simple obstruction of a vein in the extremities as in milk leg can cause extreme edema with ample oxygen supply.

I will first take up the relief of edema in cardiac cases.

If I look back fifteen years ago, when I was an interne, I can still see the average chronic cardiac case in the wards. They were usually sitting on the edge of the bed, their legs swollen to inhuman size, their bellies hanging to their knees and distended to the point of bursting. Beside the bed would be a commode and the poor wretches would be given large doses of hydrogague cathartics, epsom salts, etc., to produce five or six watery stools a day. Anyone having a diarrhea for even one day can appreciate their suffering. When this failed they were put in a chair, a trocar inserted and several gallons of fluid removed, only to return in a few days or weeks. Their legs usually "broke" as we say, and they lay in continual wet beds hard to take care of and a burden to themselves. Now-a-days cases like these are seldom seen.

The first thing done now is restriction of water intake usually to one liter a day, depending on the 24 hr. output. This, at the start, prevents more flooding of the venous reservoir.

The next thing is no salt. Salt restriction, while a simple thing to do, works wonders in many of these cases. It relieves their intolerable thirst and by reducing the salt intake we reduce the total salt content of the body, and we all know that fluid is usually held in the body in direct proportion to the sodium chloride content.

With these two measures digitalis is, of course, started, but we wish to speak of those cases in which digitalis is too slow or fails entirely to act on the edema.

The xanthine group of diuretics has been used for years with fair results, notably diuretin but one of the newer ones, theophyllin, sold under the name of theocin has special properties in these cases. It causes definite dilatation of the coronary arteries and is a powerful diuretic. It is used in an average dose of one and a half gr. 4 times a day for 4 or 5 days then omitted for several days. It is usually followed by a substantial diuresis which continues during the period of its use. It seems to be much more powerful than diuretin but has the drawback of causing severe nausea and vomiting in about 25% of the cases. If tolerated it can be used for months. This drug can also be used in the edema of nephritis unless there is severe nitrogen retention, contrary to the idea that no diuretic should be used in nephritis or nephrosis.

Another innovation is the use of acid producing salts as ammonium nitrate or ammonium chloride. Ammonium chloride is such a familiar old friend in our cough prescriptions that it is hard to think of it as a diuretic but it is and a very powerful one in many cases. It is given in 10 gr. doses 6 times a day diluted in 2 or 3 drams of water. The mechanism of its action is unknown but it proves that chlorine retention does not cause edema and that the offending party must be sodium.

The greatest advance in diuretics was the placing of novarsural and then salyrgen in the hands of the general profession.

Salyrgen being superior to novarsural we will confine our discussion to it. We can all remember that one of the old prescriptions for cardiac dropsy was a capsule containing calomel 1 gr. and digitalis 1 gr. t. i. d. This was because calomel or mercury had long been known to act as a diuretic.

Salyrgen is a complex compound of mercury with a chemical name too long to remember, it contains 36% metalic mercury and is sold in 1 or 2 cc ampoules of a 10% solution. It can be given either in the muscle or in the vein and works equally well. The best method is to put the patient on 60 grs. of ammonium chloride a day for 3 or 4 days as this seems to assist its action, and then inject ½ cc of salyrgen in the muscle. If no untoward reaction occurs 1 cc or 2 cc are given in the muscle or in the vein next day. Now, bearing in mind what I previously said, that dropsy occurs because of an overflow in the venous reservoir, how can salyrgen which has no effect on either the heart or kidney per se cause this tremendous diuresis?

Many theories have been propounded but no answer that satisfies has been found. The only definite thing known is that the chlorine output is greatly increased, and that even with profuse diuresis will amount sometimes to 70% while the blood serum remains at 40%. As no more blood is flowing through the kidney than before either there is a specific action on renal epithelium or some change in the chemical structure of the body fluid.

The only contraindications to the drug is nephritis with nitrogen retention or susceptibility to mercury.

In an ordinary case salyrgen can be given in the muscle or the vein in doses of 1 to 2 cc every 4 or 5 days for an indefinite time, as many as 200 injections have been given to one patient without harm. After an injection there is a latent period of 4 to 6 hrs. followed by a profuse diuresis of up to 4000 cc in 24 hrs., the action running to its height about 12 hrs. after the injection and then subsiding. If any reaction occurs it will be in the form of abdominal cramps and bloody diarrhea which is easily relieved by opium and bismuth. No fatalities have been caused by it.

To recapitulate an ordinary case of cardiac dropsy:

1. Restrict fluid.
2. Use salt free diet.
3. Digitalize.
4. Give am. chloride 10 grs. 6 times a day, or theocin ½ grs. 4 times a day.
5. Inject salyrgen 1 to 2 cc every 4 or 5 days till dropsy is relieved.

This treatment also applies except for the digitalis; to cirrhosis of the liver or Banti's disease.

EDEMA OF NEPHRITIS

You often hear it said that there is no explanation for the fact that the edema of nephritis is different from cardiac dropsy insofar as the fluid does not always obey strictly the law of gravity.

There is, however, an explanation of this, and that is the fact that the blood serum of nephritis has a lowered osmotic pressure which is not the case in cardiac edema, and, therefore, the sodium chloride must be retained in the tissues as it is for some unknown reason expelled from the blood. At the start nephritic edema is an intracellular edema while cardiac edema is not. These statements are mostly theory but I noticed in the *Journal A. M. A.*, of May 3rd. experiments on the osmotic pressure of blood serum in other diseases seem to confirm this.

In the edema of nephritis the cause is supposed to be either in the kidney itself refusing to excrete water and salt or an injury to the blood vessels. Fisher's theory as to acidosis seems to be untenable.

The treatment of this edema is first the reduction of fluid intake to 1000 or 1500 cc. This will produce the effect in some cases of causing uremic convulsions and if so must be discontinued and the patient allowed to die naturally. The reason for this is of course that in cases where both the nitrogen mechanism and water and salt mechanisms are both hit, the edema acts as a dilutent for the nitrogen and tries to prevent lethae concentrations.

As all these cases have salt retention it is paramount to restrict salt by salt free diet.

THE HOT AIR BATH

Large quantities of water can be removed by the application of any type of electric light device placed over the patient. The ordinary electric baker can be placed over the patient, covered with blankets and result in great loss of water.

CATHARTICS

In these cases the use of hydrogogue cathartics is of some use.

In cases in which there is no nitrogen retention it is safe to use salyrgen exactly the same as in cardiac dropsy but of course this usually only in cases of nephrosis.

If case is pure nephrosis great benefit will result from the use of high protien diets and every case of so-called Bright's disease does not mean nitrogen retention and if you can be sure you are dealing with nephrosis a high protien diet and salyrgen will be of value. Some men report good results in edema of nephrosis by using thyroid extract in doses of 5 to 10 grs. t.i.d.

A nephrosis is characterized by low osmotic pressure in the blood serum, normal phenolthalein excretion and normal blood urea with no enlargement of heart or increase of blood pressure.

To sum up the treatment of the edema of nephritis the important things are:

1. Water and salt restriction.
2. Catharsis.
3. Sweating by hot air.

Of Nephrosis:

1. Water and salt restriction.
2. High protein diets.
3. Salyrgen or thyroid extract.

My personal experience however teaches me that in both renal and cardiac edema if the stage of anasarca is reached no matter how well you relieve the edema these patients do not live very long, and while in hospital practice they seem to recover, if you have to take care of them for any time you are struck with the fact that in a year or two they are nearly all dead, especially in cases of nephritis, relief of the edema seems to hasten their death.

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DISCUSSION

DONALDSON KINGSLEY, M. D. (Hastings): I hardly know what to say about a competitor who asks me to discuss a paper to be given by him and then delivers a paper in which there is so little to criticise. I can find no objections to his theory of cardiac dropsy. When he suggested that digitalis did not increase the output of the diseased heart I felt that I had found something for which to take him to task but then he stated that this was not his own opinion so I can hardly criticise him for that. So I shall wait until I find him alone to find out what he really thinks of the effect of digitalis on the heart. In regard to the mercurial diuretics I do not feel that they should be used in cardiac cases except where rest and digitalis and other recognized methods of treatment have failed, such as a hopeless case of mitral stenosis. In cases of nephritis I feel that mercurials are definitely contra-indicated. We know that mercury is injurious to the kidney and some of us have seen cases, in which kidney function was thought to be not far from normal, excrete enormous amount of fluid following the injection of novasurol and then suddenly develop a complete suppression of urine. I believe that the ideal cases for the use of these diuretics are cirrhosis of the liver, Banti's disease, and polyserositis. I think that Dr. Egen should be commended on giving us so much information in such a clear and concise manner.

F. A. WELLS, M. D., (Lincoln): I do not believe I have ever heard a more clear and concise paper than this one. We find it restful after some of the papers we have heard. The thing that I wish to add is that my experience with salyrgen has been very favorable indeed. I think that there are a number of us who can say the same of its use.

LOTHAR F. EGEN, M. D. (closing): We do not recommend this for nephritis, we recommend it for nephrosis, which is different. We do not advise it to be used in any great quantity in nephrosis.

MERALGIA PARESTHETICA

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Meralgia paresthetica or pain in the thigh with paresthesia is a syndrome due to an affection *of* the lateral cutaneous nerve of the thigh. It was first described by Bernhardt and by Roth indepently in 1895. The latter gave it the name by which it is generally known. Although called a rare disease by some authors. Goldstein, in 1921, in an article published in the *American Journal of Medical Sciences* has collected one hundred thirty-five cases. It is Dercum's opinion that it is probably not an uncommon affection. Physicians seem to be frequently affected. Whether this is absolutely true or only relatively so remains to be seen. Musser and Sailer in a paper published in 1900 in the *A. J. M. S.* reported ninety-nine cases, ten of which were in physicians. Of my own five cases, three occurred in medical men. About 75% of the cases occur in men and most of the patients are between 40 and 50 years of age. The lateral cutaneous nerve is a branch of the lumbar plexus arising from the loop between the anterior division and the 2nd and 3rd lumbar nerve. It pierces the psoas magnus, emerging from it at its lateral border. It then crosses the iliacus covered by the iliac fascia and passing under Poupart's (inguinal) ligament below the anterior superior spine, it enters the thigh. Here it runs between the two layers of the fascia lata and divides into two branches. The smaller posterior branch passes to the gluteal region and supplies the integument over part of this region. The larger descending branch becomes superficial about 3-5 cm below Poupart's ligament and supplies the skin over the antero-external surface of the thigh from the great trochanter as far down as the external condyle of the femur.

Very little is known about the pathology of this affection. A few times resections have been done for the relief of persistant pain and portions of this nerve excised for histological study but no changes were found. In one case which came to necropsy a spindle like swelling of the nerve at the point where it crossed the crest of the ilium was found and examined and in this region evidences of neuritis and perineuritis were demonstrated. Warda found a swollen tender nerve on palpation in one of his cases. The majority of cases are probably neuralgic and not neuritic in character. Clinically it is only occasionally possible to distinguish between neuralgia and neuritis of the nerve.

The symptoms vary greatly in intensity in different cases. The most common complaint is of abnormal sensations of numbness, coldness or tingling on the front and outer surface of the thigh.

In the affected area epicritic sensibility is disturbed so that the patient has difficulty or is entirely unable to perceive light touch, to tell the distance between two points or to perceive slight differences between cold and warm. Sensibility to pain is affected only to a certain extent. This is according to Head, typical of peripheral nerve lesions, although C. H. Frazier has recently questioned Head's teaching. The pilomotor reflex, the phenomenon of goose flesh, is also absent in some cases.

The patients' subjective complaints are variously described by them. Touching the bare skin feels as if a layer of cloth intervened, or as one might feel a touch on the back of a gloved hand. These sensations vary in intensity. Very distressing at times is the extreme hyperesthesia of the skin of the affected area so that the slightest touch and pressure even of the clothing is annoying and painful. Souques reports a case in which the pain was so intense that during a paroxysm morphine was necessary. Some patients complain of marked soreness, of shooting pains resembling somewhat those of tabes, of a sensation as if the muscles were grasped by an invisible hand and twisted. These painful sensations are usually of short duration and of variable onset. They may persist for long periods of time and prove very intractable to treatment. They are frequently increased on walking and standing and relieved when the patient sits down and disappear completely on lying down. In the majority of cases there is a point of tenderness just below the anterior superior iliac spine where the nerve pierces the fascia. Some cases are free during summer while in fall with the coming of cold weather it returns.

Influenza, gout, syphilis, typhoid fever, rheumatism, diabetes, obesity, have all been mentioned as possible or probable factors in the causation of this disease, and undoubtedly may act as predisposing causes. Flat-foot is also mentioned as present in some of the reported cases. The main cause, however, is undoubtedly to be found in two factors, which depend on the anatomical position of this nerve. The first of these is that the nerve is rather exposed to traumatism at certain places, the other that it runs through structures indispensable to standing and to walking, i. e., the psoas muscle and the fascia lata. The contraction of the muscle and the tension of the fascia necessary to maintain the upright position cause pressure on and stretching of the nerve. This explanation also accounts for the relief obtained by change of posture from standing to sitting or lying down. Flat-foot through the altered relationship in the joints of the foot resulting in increased strain on the musculature of the leg and thigh, aggravates the pulling and stretching to which the nerve is normally subjected and thus produces the condition of paresthetic neuralgia. The correctness of this view is born out by the fact that support of the broken arches of the foot, a remedial measure first suggested by Pal of Vienna, I believe, frequently relieves and eventually cures the condition; unfortunately not always.

Roth has pointed out in his original monograph that the nerve is exposed to pressure at three points. First just after its exit where it passes beneath the psoas muscle, second where it curves around the anterior superior spine and third in the fibrous canal in the fascia lata. Among the mechanical factors responsible have been mentioned pressure from pelvic tumors or from the pregnant uterus. A case of Prices', a woman thirty-one years of age, had the affection during two succeeding pregnancies and was free during the interval. Corset pressure has been repeatedly found to cause the disease, especially when the corset reaches down to and over the thigh. Miller and Goldstein have each reported such a case where cutting a portion of the corset over the region below the anterior superior spine has given relief to the pain. Meirowitz exhibited a case before the N. Y. Neurological Society in a man, a coat presser, who had been ironing coats for twenty years, standing at a table and pressing his thigh against the edge of the table top. Trusses and belts, especially the heavy military kind, have frequently caused the affection. In going over the histories of the cases reported one is impressed by the recurring statement that the patients' occupation necessitated their being on their feet for long periods of time. Not infrequently it is mentioned that they have been overweight and Dr. Woltman of the Mayo clinic, in a private communication, stated that nine out of their twenty-two cases have been overweight. Some patients have had injuries to one foot necessitating excessive weight bearing by the other leg which then develops the paresthetic neuralgia. Most of the patients are middle aged individuals between 40 and 50 years of age. The right and left leg are affected with almost equal frequency and at times it is bilateral.

The diagnosis of the condition is not difficult if one's attention has once been directed to it. Physicians and at times laymen who have done some reading on nervous diseases are apt to be more concerned because they mistake the condition for the lancinating pains of tabes. My first patient with this disease, a prominent Denver physician, came to me in great distress as he was certain he was developing tabes and as he was a rather neurotic individual it was difficult to convince him otherwise. I have been wondering if the apparent frequency with which physicians seem to be affected is not due to their familiarity with the other grave disease which causes them to give more heed to slight disturbances of this kind. It must be admitted that in the presence of a known syphilitic infection the diagnosis from neuro-syphilis may at times require careful study of the case before a diagnosis can be made. I have seen one case where a mistaken diagnosis of intermittent claudication was made in an elderly individual with high blood pressure on account of the pain coming on after walking a short distance with relief from a short period of rest and return of the pain on resuming the walk.

The prognosis in many of these cases is good although the course of the disease is variable and very indefinite. It may be a very trivial affection and again very annoying in character.

Treatment: The orthopedic condition should always be carefully studied on account of the frequency with which flat-foot is found in these patients. At times the relief of pain from the treatment of the foot condition is very striking, while in others although flat-foot is found to be present and corrected the pain persists. Sacroiliac disease, which may at times bring on this trouble, should be looked for and treated by appropriate support. If these measures fail or do not seem to be indicated, galvanism and some form of the salicylates with rest in bed often give good results. In very obstinate cases alcohol injection into the nerve has been used with good effect. But there remains a small group of cases where none of these measures give relief and where finally resection of the nerve has to be resorted to.

That any coexisting condition as chronic infections, metabolic diseases, etc., must be taken care of goes without saying.

Case 1. M. C., manufacturing jeweler. Typhoid 25 years ago. Lumbago 12 years ago. Lost 30 lbs. last year on account of gallbladder trouble. Gallbladder drained 5 months ago. Good recovery.

Complains of burning sensation on outer aspect of left thigh as far as knee, on right side on outer side of upper half of thigh. Constant, worse after exercise or when on feet much. Does not bother during night and is free from it when first rising in morning.

Examination shows slight diminution of tactile sensibility to all qualities over affected areas.

Patient has marked pes planus on both sides. Correction of this condition relieves the nervous disturbance.

Case 2. A physician, single, age 48 years, has been worried about a numbness over the lower half of the outer side of the thigh which has been present more or less, for a number of years. He is free from it for several months, then it will return and bother him for weeks.

He also has at times a rather sharp stabbing pain through the rectum. This pain never lasts more than about ½ minute. Returns sometimes a few times in the course of the day but is altogether quite infrequent. In combination with the numbness it has given the patient much cause for worry. He is afraid of developing tabes dorsalis. Speaks of his rectal crises, etc.

Repeated careful neurological examinations failed to demonstrate anything of a pathological nature. Rectal examination demonstrates a few hemorrhoids and a slight prostatic enlargement. Although assured that the condition he complains of in the legs is meralgia paresthetica and that relief of his constipation would result in a cure of his rectal crises, he insists on having several blood Wasserman tests made and as they were negative, on a spinal puncture. This also was negative.

Case 3. Another physician, married, 50 years, complains of paresthesia on outer surface of right thigh, from middle to the knee. In this area supplied by the lateral cutaneous nerves there is diminished sensibility to light touch, pain and temperature. This condition arises only when the trouser belt which the patient wears slips over the crest of the ilium and disappears again a few minutes after this pressure is relieved. This condition has existed for several years.

With exception of the sensory change the general physical and neurological examination as well as all laboratory tests are negative.

Case 4. J. G., 70 years, Russian, peddler. Has had paresthesia on outer surface of right leg for a long time. Gets worse when walking when it hurts like "fire". Is not doing any work and spends most of his time sitting. Is wearing a belt, has flat feet, and suffers from severe constipation. Since he has adopted suspenders and used a support in his shoes the condition has been improved.

Case 5. Physician, woke up one morning with severe pain in the right thigh, after a very hot night when he had been perspiring freely while lying in a draft from an open window. There was diminution of tactile sensibility over the area supplied by the external cutaneous nerve. With the exception of the exposure no etiological factor could be discovered.

HYPERTHYROIDISM IN CHILDREN UNDER TEN YEARS OF AGE

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In reviewing the publications on goitre of the past twenty years one is struck by the remarkably small number of reported cases of hyperthyroidism in children as compared to the large number of simple colloid and adenomatous goitres observed. So few indeed are the reported cases that it seems probable that many cases have not been recognized as such and have either died of some intercurrent infection of childhood or have gone into adolescence before being diagnosed.

That simple goitre may occur at any age is recognized. Paul W. Sweet(1) reports one in a new born infant, successfully treated by administering iodized calcium lactate to the mother. A. Eckstein(2) reports a case of congenital goitre, treated successfully by the Wieland method, by daily rubbing into the skin a pea size piece of iodized ointment. Eckstein notes that Melchoir records twenty cases of operated goitre in infancy, seven recovered.

The incidence of simple goitre in childhood is practically parallel to the incidence in the adult in any given locality for the etiological factors are the same for each—that is insufficiency of iodine.

Kleyn(3) of Essen examined 3,569 boys and 4,463 girls in one district, the goitre being present in 54.2% of the girls and 47.7% in the boys. He reports no cases of hyperthyroidism.

D. Oswald Taylor(4) reports the examination of 10,000 school children in the Manchester Eng. area with a goitre incidence of 3.7% to 8.8% in boys and 5.5% in girls. He notes no cases of exophthalmic goitre, but refers to three cases having tachycardia.

A. S. Jackson(5) states that a review of the cases of exophthalmic goitre at the Jackson Clinic fails to reveal any that occurred in children under the age of ten.

In 1913 Lewis reported only five cases occurring in children under ten years of age in a series of 1,512 operated upon at the Mayo Clinic between 1905 and 1913.

Dinsmore(6) in his splendid report of 48 cases in children under fourteen years notes nine that were ten years or less. All females. In no instance have we been able to find a recorded case in male under ten years of age.

There is no one definite etiological factor to which hyperthyroidism in children may be attributed. Heredity may have some influence, though one cannot be sure that it is not environmental condition rather than heredity that is a responsible factor.

The stress periods of puberty, pregnancy and menopause that are considered definite factors in the adult, of course, have no influence in the young child. That infection plays the major role is evidenced by the fact that in all cases where we can obtain a complete history hyperthyroidism in children has followed some severe acute infectious disease or is associated with a long continued chronic low grade infection.

In the four cases reported here three developed following an acute infection and all were associated with prolonged tonsil and adenoidal infection.

The symptoms in childhood do not differ materially from those in the adult, the first symptoms noticed usually is nervousness and increasing irritability—then tachycardia with exertion dyspnea.

The enlargement of the thyroid gland and tremor are usually not observed until later though they probably are synchronous. Exophthalmos may be present. Exophthalmos was present in the four cases reported here—markedly so in case four as is demonstrated by the photographs.

This exophthalmos was observed when she was two years of age, the thyroid enlargement not becoming apparent until one year later.

Loss of weight is not so marked in the young child as in the adult—it being opposed by the growth factor, may in mild cases result in merely a failure to gain weight.

The treatment is a point for discussion.

Dinsmore and Lahey(7) apparently consider that hyperthyroidism in children indicates surgery as it does in the adult.

Both observe, however, that a much more carefully operative procedure must be employed.

A two stage operation with possibly a primary ligation of the superior thyroid arteries, if preliminary iodine therapy is not sufficiently effective, seems to be the procedure of choice with most operators.

Children are markedly susceptible to operative procedures and unless the basal metabolic rate can be brought to approximately normal no preliminary operation for removal of focal infection should be done.

The important role played by the thyroid in the physical and mental development of the child makes one feel that medical, hygienic and dietetic measures should be employed before making the surgical attack upon the gland. A larger portion of the gland should be preserved in the child than in the adult should operation become necessary.

Of the cases noted hereafter three were treated primarily with iodine, dietetic and hygienic measures observed, radiation with actinic light twice weekly and finally by removal of chronically infected tonsils and adenoids.

Complete recovery was made in all three with no relapse after four, two and a half, and one and a half years. The case treated by thyroidectomy did not respond to other measures and in ill-advised tonsillectomy performed demonstrated perfectly how dangerous are operations performed when the patient is suffering from a severely toxic goitre.

CASE I

Roy A., age 8, white, male, American.

Complaint—Tachycardia 140-160, weight stationary six months, weakness, moderate exophthalmos, enlarged thyroid.

Family history—Father, mother, three brothers, three sisters, living and well, none have goitres. No history of goitre on either side of family.

Previous history—Acute tonsillitis when two years of age with recurrent attacks at irregular intervals. Chicken pox at four years, measles five years, scarlet fever (severe) at age of six and a half.

Present history—following severe attack of scarlet fever from which he made good recovery, no complications, patient became nervous and irritable. The nervousness increased gradually, was associated with mascular twitching, weakness upon exertion, no gain in weight for past six months. Appetite very good, but eats only sweets and starches.

Examination:

Skin—Dry, scaly.

Eyes—Moderate exophthalmos.

Teeth—Fair

Tonsils—Tonsils and adenoids enlarged and infected.

Thyroid—Firm, symmetrical, palpable, enlargement.

Heart—Regular, no murmurs or enlargement. Rate 156.

Lungs—Normal.

Abdomen—Normal.

Reflexes—Exaggerated, marked tremor.

Laboratory findings—Negative except B. M. R. of plus 46 (estimated on weight basis).

Treatment:

Medical—Lugols solution, gtts. 3 to 8 twice daily. Cod liver oil drams one-half twice daily.

Dietetic—High caloric diet, milk and fresh vegetables required.

Activities restricted—12 hours rest in bed at night with rest period in bed of one and one half hours morning and afternoon.

Physiotherapy—Exposure to actinic light twice weekly, starting at two minutes to fifteen minutes on front and back.

Surgical—The above outlined treatment was maintained for sixty days until general improvement and a metabolic rate of plus 5 made removal of tonsils and adenoids possible.

After tonsilo-adenoidectomy, same treatment was maintained for thirty days then discontinued.

Patient normal, pulse rate 80-90.

Thyroid normal, no exophthalmos, progressive gain in weight.

Has had no recurrence during four year period.

CASE II

Alice D., age 8½, white, female, born Austria.

Complaint—Nervousness, weakness, loss of weight, rapid heart.

Family history—Mother and father living and well. Two brothers living and well. Maternal grandmother had exophthalmic goitre.

Previous history—Always well except for mild attacks of tonsillitis until seven and one-half years of age when she had measles, whooping cough and scarlet fever within a period of four months.

Present history—Following recovery from whooping cough became increasingly nervous, appetite regular, irritable, heart rapid, breathless upon exertion, weight stationary for six months, now losing.

Examination:

Skin—Dry.

Hair—Rough, emaciated.

Teeth—Good.

Eyes—Exophthalmis moderate.

Tonsils—Enlarged and infected.

Lungs—Normal.

Abdomen—Exaggerated, tremor.

Laboratory findings:

Blood Leucocytes 16,000.

R. B. C. 3,400,000.

Urine negative.

Wass. negative.

Basil M. R. Plus 38.

Treatment—Same as in case 1. Tonsillectomy after 80 days treatment.

Results—No recurrence in two and one-half years.

CASE III

Frank L., age 9½, white, male, born Canada.

Complaint—Weakness, rapid heart, nervousness.

Family history—Mother and father living and well. No brothers or sisters. No history of goitre on either side of family.

Previous history—Recurrent tonsillitis since four years of age. Measles, chicken pox, small pox between ages of six and seven and a half. Dyphtheria when eight and a half years.

Present history—Coincident with attack of dyphtheria an enlargement of thyroid was noticed, but was attributed to enlarged cervical glands. Exophthalmos developed shortly afterward. Gradual loss of weight, ten pounds during past year.

Examination:

Skin—Sallow, muscles show emaciation.

Teeth—Good.

Eyes—Marked exophthalmos.

Tonsils—Very large and cryptic. Mouth breather.

Thyroid—Moderate, firm enlargement.

Heart—No murmurs. Pulse rate 172.

Lungs—Normal.

Abdomen—Flat. No pathology.

Reflexes—Increased. Marked tremor.

Laboratory findings—Negative except for basal metabolic rate of plus 54.

Treatment—Same as in cases I and II. Continued forty days before removal of tonsils and adenoids. Continued thirty days after.

Results—No recurrence after one and one-half years.

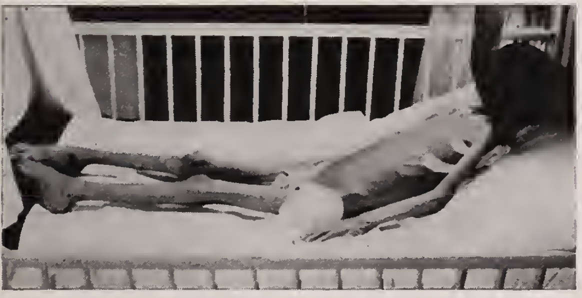
CASE IV

Immanuel Hospital Case 25974.

Dorothy C, age 4, white, female, American.

Complaint—Weakness, loss of weight, exophthalmos, rapid heart.

Family history—Father living and well. Mother living, extremely nervous, hysterical at times. Two brothers living and well.



Case IV. Showing extreme emaciation.

No record of goitre on either side of family.

Previous history—No previous illness except a chronic recurring tonsillitis first observed when thirteen months old.

From infancy patient was noticibly over active.

At two years of age the muscular activity, slow gain in weight and nervousness was so pronounced that the parents consulted a physician who noted an exophthalmos, but made no diagnosis, other than chronic tonsillitis.

Condition progressed until when three years of age because of the loss of weight, nervousness and tachycardia (180-200) she was confined to bed. Exophthalmia very pronounced and an enlargement of thyroid observed.

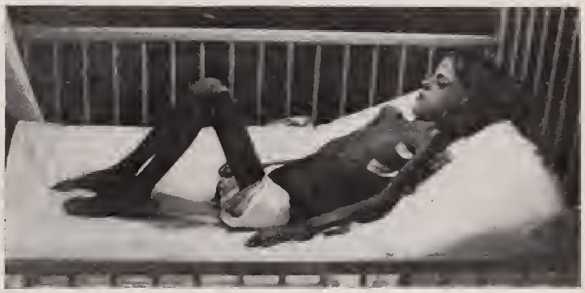
A slight improvement being observed an adenotonsillectomy was performed with nearly disasterous results.

The shock was profound and prolonged—the patient remained comatose for ten days with a pulse rate that was uncountable and on the 12th P. O. day developed pneumonia, followed by left side pleurisy with an effusion. Left empyema developed. Temperature 104 to 106.

Empyema drained under local anesthesia. Temperature dropped, gained in strength, but still seriously depressed.

Removed to Immanuel Hospital.

Examination:



Case IV. Showing marked exophthalmos.

Skin—Dry, rough.

Musculature—Greatly emaciated. Note Cut I.

Eyes—Marked exophthalmia. Note Cut II.

Thyroid—Enlarged symmetrical. Note Cut III.

Chest—Dullness on left side, discharging sinus in left subscapular region, at site of empyema drainage and opening.

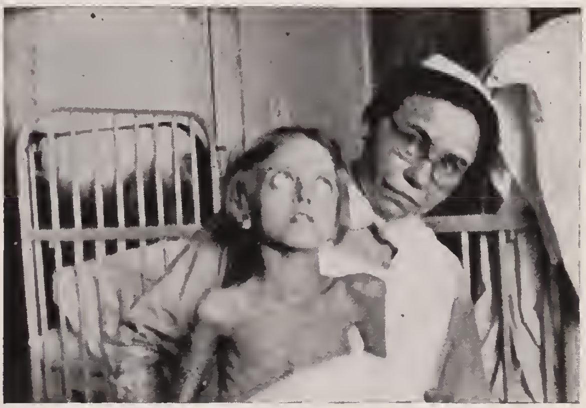
Heart—Slight systolic murmur at apex. Tachycardia pulse R. 160.

Reflexes—Increased, marked tremor.

Laboratory findings—Urine negative. Blood count, red, 4,310,000; white, 24,000; polys, 62%. Basal metabolic rate plus 59.

Treatment—Rest in bed; high caloric diet; actinic light daily 8; lugols solution M. 3 twice daily.

Patient not responding to treatment and the metabolic rate remaining high a ligation of Rt. Superior thyroid artery was done 6-16-27. Ligation performed on left side 6-27-27.



Case IV. Showing enlargement of thyroid.

One month later the metabolic rate being down to plus 17 a thyroidectomy under nitrous oxide oxygen anesthesia was performed.

Pathologist report—

Thyroid—The alveoli were for most part small and were variably filled with colloid material of very unequal staining affinity. A number of alveoli showed a trabecular unfolding of the wall but not epithelium of a freely, columnar type was found. Diagnosis—Exophthalmic goitre.

The nervous, irritable, over active child with tachycardia and stationary or loss of weight should always be regarded as being a possible thyroid case and a basal metabolic test made.

It is admittedly a difficult thing to obtain a reliable basal metabolic reading from a nervous, fretful child, yet it should not be impossible to one skilled in child psychology as the pediatrician necessarily must be. The basal metabolic apparatus should be a valuable part of the pediatricians equipment. The B. M. R. should be based upon metabolic findings in normal children. Using an age or weight modification and computing upon adult standards is not exact.

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BULLETIN FROM THE LABORATORY OF CLINICAL PATHOLOGY, BRYAN MEMORIAL HOSPITAL, LINCOLN, NEBRASKA

Staff Meeting, March 14, 1930

MILES J. BREUER, M. D.

PRESENT-DAY USEFULNESS OF THE SCHILLING DIFFERENTIAL COUNT

This discussion will studiously avoid such points as are at present under controversy among hematologists, and will bring out only a few definite, practical matters which our own work has demonstrated as being useful and applicable to clinical work.

Schilling's modification of the differential count arranges the types of leucocytes in order according to their age, or their stage of development from bone-marrow cells. The percentages of the various types accurring in an individual count, constitute valuable evidence as to the activity of the leucocyte-producing organs, and consequently of the intensity of the reaction and the type of stimulus that is evoking the leucocyte reaction.

The percentages in which the various types occur are illustrated in Figure 1. Basophiles and myelocytes are not found in every count that is made, but with sufficiently numerous counts or with a sufficient number of counts, average about one-half of one per cent. These cells are found in increasing numbers in reactions calling forth an increased activity of the leucocyte-forming organs. The "young metamyelocyte" is a stage a little further along in the development of the myelocyte, with smaller size, darker-staining nucleus, smaller and more numerous granules, and a notch in the nucleus. The band forms and the segmented forms are the type previously termed "polymorphonuclears". In the band forms, the nucleus is a continuous band or ribbon, whereas in the segmented forms, the nucleus has divided into separate fragments, which may or may not be connected by chromatin threads. The "monocytes", partially corresponding to our previous "transitional" types, have a slightly more basic-staining cytoplasm than the neutrophile forms, but less basic than the lymphocytes, with a single, large nucleus, roughly rounded, but frequently irregular. The percentages of young forms, band forms, monocytes, and lymphocytes as given in this normal curve do not perhaps correspond accurately to those given in Schilling's book, and by writers who have discussed it; but they are very close to the averages thus given, and to those we have found, and have the advantage of being easily remembered. The following figures illustrate some of the things we actually know about the Schilling count.

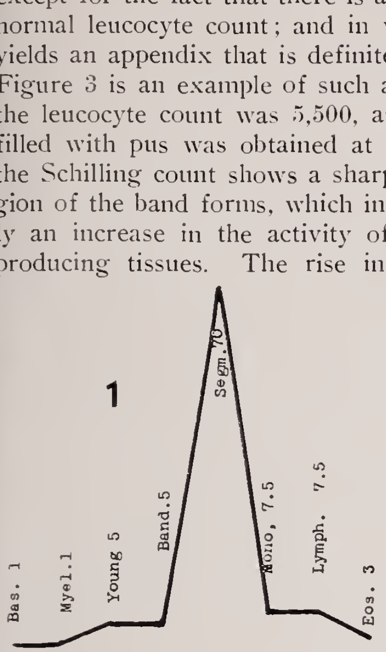
Figure 1 illustrates the count from a case of convalescing diphtheria; it was six days after the serum had been given; the membrane had disappeared and the temperature had been normal for two days, when it began to rise again, and went up to 100.8. Was it a return of diphtheritic infection because of insufficient antitoxin? The Schilling count taken at this time was almost typically as given in the schematic representation of the normal. The conclusion was that the temperature rise was not due to a relapse of the infection, but probably to serum sickness, and no further antitoxin was given. The appearance of a rash about twenty-four hours later, and the relief upon administration of adrenalin confirmed the evidence of the Schilling count.

Surgeons are familiar with the picture of an acute appendicitis that is complete in all respects except for the fact that there is a normal or subnormal leucocyte count; and in which operation yields an appendix that is definitely pathological. Figure 3 is an example of such a case, in which the leucocyte count was 5,500, and an appendix filled with pus was obtained at operation. But the Schilling count shows a sharp rise in the region of the band forms, which indicates definitely an increase in the activity of the leucocyte-producing tissues. The rise in this region is called a "shift to the left"; it denotes an increase in the number of younger, less developed leucocytes in the circulating blood, and is quite as pathognomonic of an acute inflammation, such as appendicitis, as would be a high leucocyte count.

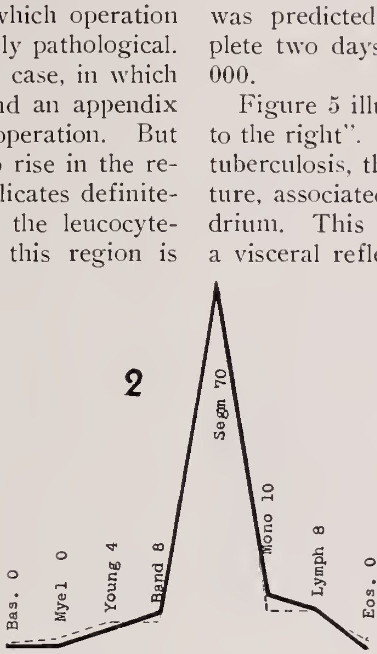
Figure 4 is another "shift to the left", indicative of an acute inflammatory condition. The patient was 70 years old, and was brought into the hospital from a distance in a state of semi-coma, due to inadequately treated diabetes. The picture was complicated by a gangrenous toe. When fine, moist rales appeared suddenly in the base of the right lung, the Schilling count was made, and on the basis of the "shift to the left" a pneumonia was predicted. Lobar consolidation was complete two days later, with a leucocytosis of 17,000.

Figure 5 illustrates the significance of a "shift to the right". In a long-standing case of chronic tuberculosis, there was a sudden rise of temperature, associated with pain in the right hypochondrium. This pain could have been explained as a visceral reflex or as a diaphragmatic pleurisy; but the possibility of an intercurrent cholecystitis had to be taken into consideration. The absence of a "shift to the left" spoke against an acute inflammatory reaction, and the increase of monocytes corresponded with what usually takes place during the exacerbation of a chronic tuberculosis. Subsequent observation confirmed the limitation of the lesion to the lungs, and the absence of gallbladder pathology.

Figure 6 illustrates the drop in the monocyte zone and the increase of lymphocytes that occurs with healing in tuberculosis.

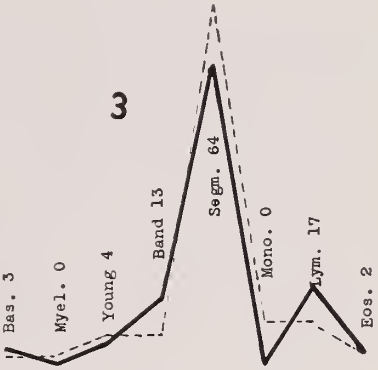


Normal Curve
Schilling's Differential Count
(Schematic.)

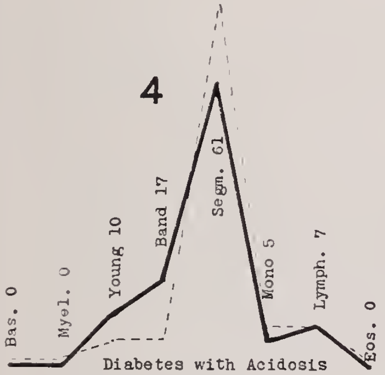


Convalescence from Diphtheria.

Serum sickness Normal Curve

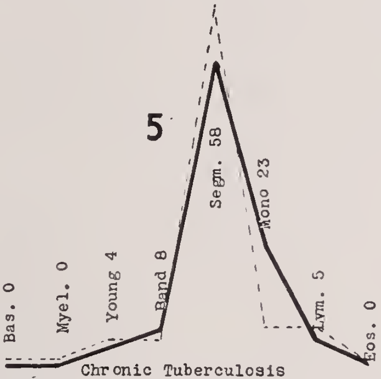


Acute Appendicitis
Leucocyte Count 5,500
Shift to the Left
Appendix filled with pus.

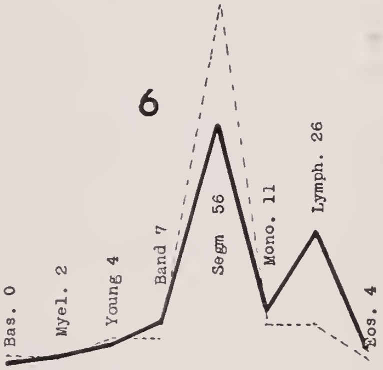


Diabetes with Acidosis

Leucocyte Count 9,800
Rales in right base
Shift to the Left
Lobar pneumonia 2 days later



Chronic Tuberculosis
Rise in temperature; upper right quadrant pain, nausea;
Question of intercurrent cholecystitis.
Leucocyte Count 12,000
Shift to the Right, indicating exacerbation of the tuberculosis



Chronic Tuberculosis

Shift to the Right in
Lymphocyte zone, indicating
healing.

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MISCALCULATED HOSPITAL DIETS

Several times within recent years we have had occasion to discuss hospital diets and dieticians* from observations based on personal experience in hospitalization. Personal observation led to the firm conviction that there was something wrong with the diets and dieticians with whom we unhappily came in contact in well known hospitals of excellent general repute. The surmise that this might be a weak spot in other hospitals seems to be borne out by the experiences of at least two other persons whom we shall quote. An editorial writer in the daily *Wisconsin State Journal* recently discussed hospital diets as follows:

> "Have you been in a hospital? We've got some daisies in Madison. Wonderful equipment, wonderful ventilation, wonderful doctors and surgeons, wonderful nurses, wonderful everything—but food. Why in the world does a hospital have to boil everything from strawberries to beef? Why does spinach taste like cabbage and why do apples taste like old horse radish? Hospitals buy the best of foods but did anybody, anywhere in the world, ever find a hospital with a chef who did not make everything taste equally unappetizing? Perhaps one can blame domestic science, for, of course, domestic science produces the hospital bill of fare. Perhaps the surrender of everything appetizing is compensated for in calories and vitamines. But take it from one who has had wide experience, the hospitals furnish mighty poor 'chuck'."

A Miss Mary Manning, a trained nurse of some years of experience, suffered a broken limb and landed in a hospital in a state of shock. She tells her story in the *American Weekly* magazine:

> "Until I became a hospital patient I ignorantly supposed that hospitals were primarily for the care of the sick.
>
> "On the first morning when I could eat in the hospital—a very hot July day—I innocently put aside hot coffee, hot oatmeal, hot meat and toast and asked instead for fresh fruit and iced water.
>
> "'Sorry', said the nurse, 'no fresh fruit is ever served. You must buy your own.'
>
> "At dinner time I tried soup, but it was greasy, washy stuff and nearly cold. The meat was probably mutton gone gray in the cooking, vegetables were overcooked and watery; the starchy dessert looked too unappetizing to be worth putting a spoon into it.
>
> "At supper the choice was cold meat or egg, dried apple stewed to mush, milk, bread or toast and butter. In my condition of shock none of the dishes appealed to me. I asked for a plain lettuce salad.
>
> "'No; salads are never served to patients unless ordered by the doctor,' the nurse said firmly.
>
> "Distaste for most foods continued in spite of a very strong tonic, and soon all the food served except an occasional vegetable soup or some fresh vegetable nauseated me, so friends brought me fresh fruit, lettuce and French dressing. But as most of these articles had to be kept in the ice chest, to which the help had access as well as the nurses, my fruit, lettuce, preserves, etc., often disappeared in the night, so the attempt to feed myself was discouraging. One morning after six oranges had been taken overnight and I had none for breakfast, I termed the place, in exasperation, 'a den of thieves', and felt better for my explosion.
>
> "Then I wondered what a diet kitchen was for and why I was not put on a diet when the symptoms of nausea, giddiness, headache, sleeplessness and an aversion to anything sweet, even honeydew melon, clearly pointed to special treatment, as these symptoms had nothing to do with a broken limb, but seemed to indicate nervous shock.
>
> "This condition continued for seven weeks, and its low mark for me was when my own French dressing gave out, and I asked for some from the diet kitchen till my fresh supply came. The reply was that they did not know what it was. I explained. Then a terrible combination, proportions reversed, of malt vinegar and mineral oil was sent up with the message that the hospital did not have any other oil. Of course, it spoiled the salad.
>
> "After three weeks I turned against white bread or toast and asked for whole wheat bread, but was told that was out of the question, as only white bread had ever been used in the hospital, and the rule could not be broken. Thereafter I bought my own whole wheat bread, but often had to go without on account of the difficulty of finding someone to get it for me.
>
> "To patients stagnating in bed after perhaps a very active life, constipation is inevitable, and a laxative diet with solidified oil is absolutely necessary to keep the intestines functioning naturally, without accumulating the gas which accompanies the use of drug aperients. But apparently the hospital staff thought otherwise, for a high protein diet of meat three times a day, white bread, hot cereals, eggs, starchy dessert—all acid-forming foods—were the staples of the daily menu in July and August, when the intolerable heat alone called for cooling nourishment.
>
> "When to this dietetic blunder was added the work of badly trained cooks, who had a genius for turning good raw material into uneatable rubbish, the im-

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*"A Lesson in Hospitalization", editorial, Nebraska State Medical Journal, August, 1923; "Hospital Diets, Dieticians and Doctors", Nebraska State Medical Journal, March, 1927.

> pression conveyed to a patient was that they were in league with the dietician to make life as unbearable as possible. I was told that the hospital had two dieticians, but that neither went near the kitchen, whose head was called 'chef', to see that menus were interpreted as well cooked food. I can well believe the statement, for no inspecting dietician would let such meals pass if she had any self-respect. It was just good raw material spoiled in the cooking."

It reads almost ridiculous, but is really tragical, as borne out by the personal experience of the writer. Why otherwise well conducted hospitals lapse in the matter of food service is beyond comprehension. Persons ill, or disabled, in their homes have tasty dainty dishes daintily prepared for them to tempt their appetites and to suit their physical needs. Apparently in hospitals patients must take what is handed out, regardless of the needs of the patient. Most of us believe that a hospital kitchen should be run to pay like a restaurant. No eating place could keep open for a month if it offered its customers the bad cooking, poor combinations, and rough service thrust upon hospital patients. Yet these patients or the contributing public are paying proportionately as much for their meals, and are, therefore, customers.

A VISIT TO THE BIRTHPLACE OF ABDOMINAL SURGERY

It has recently been my good fortune to satisfy a life-long desire to visit the birthplace of abdominal surgery.

Eighty miles south of Louisville, Kentucky, is Danville with its 4,000 inhabitants. Here, in 1809, when Danville was a settlement of some sixty houses, in what was then the frontier of the wilderness, Ephraim McDowell ventured into the unexplored field of abdominal surgery. Born in southern Pennsylvania of Scotch-Irish parentage, he received a classical education in the seminary of Georgetown, Kentucky. Later, he studied medicine under Dr. Humphrey of Staunton, Virginia, and still later matriculated in the University of Edinburgh where he received instruction and inspiration from Dr. John Bell, the foremost of Scotch surgeons and anatomists. It was at a time when Bell was giving much attention to diseases of the ovaries. It was thought that McDowell here first conceived the idea of the surgical removal of the diseased ovary. This was not an original conception on the part of McDowell nor of his teacher, John Bell. The same was true of John Hunter in 1757 and of Delaporte and Moran of France in 1774. All had suggested the possibility of performing ovariotomy but not one had ventured its execution. It remained for McDowell some years later to do the "impossible". After completing his studies in Edinburgh, McDowell located in Danville, Kentucky, where his father was judge of the district court. His training was superior to that of his colleagues, he was an indefatigable worker and possessed a pleasing personality. These qualifications assured him distinction in his profession and gained for him a general practice throughout a wide territory which he traversed on horseback. The surrounding country was little more than a wilderness, as indeed much of it is to this day, and the going was difficult. McDowell was reputed to be the best surgeon west of the Alleghanies. He was rewarded with a diploma by the Medical Society of Philadelphia, the most distinguished medical organization in its day. While engaged in the general practice of medicine McDowell performed every sort of surgical operation so far as surgery had developed. He gained particular distinction in lithotomy and in strangulated hernia.

EPHRAIM McDOWELL

The Birthplace of Abdominal Surgery

It was in the month of December, 1809, that

McDowell was called in consultation by two physicians who were in attendance upon one Mrs. Jane Crawford who was thought to be pregnant. McDowell advised her of her condition and volunteered his services in the "noble experiment of removing a huge abdominal tumor". A few days later Jane Crawford journeyed by horse-back through the wilderness, a distance of sixty miles. It required two days to complete the journey. The abdominal wall was contused from the resting of the tumor on the pommel of the saddle. After a few days of rest in the home of McDowell she submitted to the operation. Assisting Ephraim McDowell was his nephew, James McDowell, M. D. A nine-inch median abdominal incision was made but the tumor was too large to deliver intact, so McDowell incised it and scooped out with his hands fifteen pounds of "dirty gelatenous looking substance", after which the sac was removed and this weighed an additional seven and one-half pounds. McDowell ends his description of the operation by relating how he turned the patient on her side to let the blood run out, tied off the pedicle with a leather strip from a glove and anchored the ligated pedicle to the lower end of the wound. The incision was closed without drainage by inserting interrupted stitches alternating with adhesive strips. She was put to bed and a "strict observance of antiphlogistic regime was prescribed". Five days later he visited her and found her in the act of making up her bed. In twenty-five days she returned home by horseback and it is recorded that she lived for thirty more years, dying at the age of seventy-seven.

To fully appreciate the achievement of McDowell we must bear in mind that he was essentially alone with his problem. None of the great masters of surgery, the world over, had dared attempt the operation though they were frequently confronted with the problem of observing such rapidly growing tumors exhausting the strength of their patient. There were no anaesthetics to deaden pain, not even the hypodermic needle had yet been invented, much less a general anaesthetic. There were no antiseptics to guard against sepsis and salt solution was unknown as a means of combatting shock. Indeed it was common practice in those days to bleed patients at intervals following major operations. McDowell had no competent assistance—no trained nurse to assist in the operation and to watch over his patient. He operated in a mere shed of a building, not more than 8 by 10 feet and partitioned into two small poorly lighted compartments. This you will see in the accompanying illustration.

But McDowell was well grounded in anatomy and in surgical principles. This was true to such a remarkable degree that little that is now deemed essential to the removal of such tumors was wanting in his technic, save the use of antiseptics and anaesthetics. He had courage to a marked degree which served him well in the days to follow when the medical profession questioned his veracity and branded him "a woman butcher". McDowell died at the age of 59 but not without faint recognition of his priceless contribution. He was granted the honorary degree of M. D. by the University of Maryland, and the editor of the Medico-Chirurgical Review of London, the most influential of medical periodicals of the time, retracted its former criticisms and asked pardon of God and Ephraim McDowell of Danville for its uncharitableness. In 1879 a notable group of professional men and statesmen dedicated a monument in Danville to the memory of "The Father of Abdominal Surgery" and in recognition of "the greatest achievement in modern surgery". In the accompanying illustration you will see in the front of the house a bronze tablet placed there by the D. A. R.'s in acknowledgement of "the services which Ephraim McDowell gave to suffering womanhood".

I found the house now standing in a negro district and recently occupied by negroes. It was doubtless an imposing structure when Danville was but a frontier settlement of not more than sixty houses, but now it is in a deplorable state. In the rear the walks are crumbling, the windows are broken and the rooms which are unusually commodious, each with an open fireplace, are reeking in filth.

Is it not a thousand pities that the birth-place of abdominal surgery should be so neglected when but a small sum of money could restore it to its original state and preserve it for generations to come?

All honor to Ephraim McDowellt—the man who dared, and to Jane Crawford, without whose bravery McDowell's courage would have been unavailing.

—Palmer Findley, Omaha.

COMING MEETING OF MISSOURI VALLEY MEDICAL SOCIETY

The 43rd annual meeting of the Missouri Valley Medical Society will be held in Des Moines, Iowa, Wednesday, Thursday and Friday, October 15th, 16th and 17th. Headquarters will be at the Fort Des Moines Hotel.

To quote from the Preamble to the Constitution, as adopted during the societies reorganization in 1927, "The objectives of this association shall be primarily educational. The society shall give opportunity to the faculties of the universities of the district, to members of the association, and to invited guests, to present such work as will tend to place the practice of medicine in the district on a higher scientific plane".

That this has not been written in vain, we know. Those who have had the good fortune to attend the meetings during the past few years attest to this. The programs have been varied so that they have had universal appeal whether the physician be a general practitioner, a man devoting all his time to teaching in a medical school, or one specializing in a limited field. This policy will be continued.

It has, and is still felt, that such a society has a most important role to play in the workaday lives of the physicians of Missouri Valley. It brings to our door, so to speak, the opportunity for keeping pace with what is going on under the direction of some of our country's most able research workers and practicing physicians; it affords the means of meeting these men. The opportunity to renew old friendships and the making of new amongst the rank and file of the physicians of the Missouri Valley is assured. All this and more is available without expending the money and valuable time necessary to attend such meetings at greater distances.

The program for this year's meeting has been completed. It includes: Drs. Joseph C. Bloodgood of John Hopkins University, Baltimore; J. H. Musser of Tulane University of Louisiana, New Orleans; Russell M. Wilder of Chicago University; Laurence H. Mayers and Loyal Davis of Northwestern University, Chicago; Willard Bartlett of Washington University, St. Louis; E. Starr Judd of Mayo Clinic, Rochester; Horace M. Korns, F. R. Peterson and Julian D. Boyd of the University of Iowa Medical School; Abbott M. Dean and Aldis A. Johnson of Council Bluffs; J. B. Potts and F. Lowell Dunn of Nebraska University Medical School; John R. Kleyla and James F. Kelly of Creighton University Medical School; C. B. Francisco, Earl C. Padgett and P. T. Bohan of Kansas University Medical School and Walter L. Bierring and N. Boyd Anderson of Des Moines.

It is felt that with such a program to offer, the officers of the society may be justified in their belief that this year's meeting will see a record attendance.

A complete program will be mailed about October 1st, 1930.

—J. D. McCarthy, Sec'y, Omaha.

DR. ROY FOUTS, PRESIDENT AMERICAN CONGRESS OF PHYSICAL THERAPY

When the ninth annual Clinical Congress of the American Congress of Physical Therapy convenes at the Hotel Jefferson, St. Louis, September 8-12, 1930, it will have as its presiding head, Dr. Roy Fouts, Omaha, President-elect, who has become a nationally recognized character in the field of physical therapy. Dr. Fouts was one of the organizers of what is now known as the American Congress of Physical Therapy and its secretary from its organization until a year ago, when he was elected president-elect.

Doctor Fouts was born on a farm near Bloomfield, Iowa, in 1885, attended public school and the Southern Iowa Normal School, attended the Medical Department University of Illinois from which he was graduated in 1909. After practicing in Iowa one year he came to Dawson, Nebr., where he was in practice until 1918 when he entered the medical corps of the army. Returning from the army after the war he located at Falls City where he remained until 1922 when he became roentgenologist of Lord Lister hospital, Omaha. At present he is doing x-ray work and physical therapy in Omaha and has several hospital connections.

DR. ROY FOUTS

Doctor Fouts has always taken an active interest in medical organization work. He was councilor of the third councilor district while residing at Falls City and organized the third district medical society. He is at present chairman of the committee on medical defense of our state association and is a member of the legislative committee. He has been a member of the House of Delegates of the American Medical Association since 1922 and holds an important committee appointment in that body.

Dear Reader:

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We want the Journal to serve you.

EDITORIAL PARAGRAPHS

The Inter-State Postgraduate Medical Association will hold its annual meeting at Minneapolis, October 20-24, in the Municipal Auditorium.

The Mendelian law was discovered by Gregor Mendel, a monk, in a monastery at Brunn. His first experiments were made with smooth and wrinkled peas.

Strange how we admire ourselves and our creations. The *Georgia Medical Journal* modestly admits (but not by its editor) that it is the best in the United States.

The reported discovery by Pfeiffer of the germ of the common cold has not been generally accepted by the profession. His discovery is the *micrococcus coryza*. Let us hope.

A press clipping on the desk relates the story of the first dollar earned in the practice of the profession. Most of us could tell interesting tales about the first dollar received.

The public activities committee headed by Dr. E. R. Hays, chairman, featured a health exhibit at the Adams County Fair this fall. Twenty-seven physicians participated in the program.

Secretary of Agriculture Hyde stated in an address that if there were no diet experts influencing people in what they should eat there would be no farm products surplus. We wonder.

Cuba is making a bid for tourist business. An average temperature of 77 degrees with a seasonal variation of but 12 degrees and cooling trade winds are cited in favor of its claims to consideration.

The ninth annual meeting of the American Congress of Physical Therapy will be held at Hotel Jefferson, St. Louis, September 8-12, inclusive. Dr. Roy Fouts, Omaha, President-elect, will preside.

Free medical examinations were offered to the children of Saunders county who are to enter school with the beginning of the fall term, during the month of June, through the promotion work of the county superintendent.

That propaganda for immunization of school children is "taking" is demonstrated in our own state. Holdrege has just completed immunization of 850 children, 70 of pre-school age. The work was done, gratis, by the local physicians.

Doctor Wm. Muhlberg of Cincinnati, says that golf is harmful because "the average man who plays golf goes out to the course, dubs a shot, gets mad, tears his hair, maybe throws his club away, and as a result increases his blood pressure."

The United States Civil Service can place a Biologist at an initial salary of $3,800. Competitors will not be required to report for examination at any place, but will be rated on their education, training, experience, fitness, and on publications or thesis.

An editorial in the *Rhode Island Medical Journal* suggests that the records of many physicians are less complete than were those of the cave dwellers who cut notches in the post at the entrance to the lair—which is a very serious indictment.

This editor has no right to assume to be a critic, but has the temerity to call attention to the bad form used by some physicians of signing themselves "Dr." So and So. A physician may by propriety sign himself "M. D.", but should never sign "Dr.", except under very extraordinary circumstances.

Dr. Anna S. Kugler, first American missionary to India, died recently after a service in the mission field of forty-seven years. She built and developed Guntur hospital, one of the largest and finest mission hospitals in south India, an institution which provided medical aid annually for tens of thousands of native women and children of all classes.

It was Mother's Day at school and one fond mother had brought with her her nursing babe. When the babe became restless, mother, as all mother's do, applied the child to the breasts. Pupil Tommy, noticing what was going on, raised his hand and snapping his fingers, said: "My mother, also, has two of them things, but she don't use 'em".

Dr. John R. Harger, Chicago, who was recently elevated to the presidency of the Chicago Medical Society, the largest local medical society in the world, was born at Osceola, Nebr., attended the Nebraska state university three years, graduated from Rush Medical College in 1896, is assistant professor of surgery in the medical department of the University of Illinois and is attending surgeon to a number of hospitals.

A railroad car equipped with x-ray and other apparatus to be used for physical examination of employes engaged in train operation and applicants for this service has just been built by The Milwaukee Road. It has been placed in service under the supervision of the railroad's Surgical Department and will be used over the entire system to supplement the work now performed by the road's physicians and surgeons.

The state bureau of health calls attention to the fact that the present day menace of typhoid fever is not so much from drinking water, but from carriers—persons who have had typhoid fever and who still harbor the germ in the gallbladder and intestinal tract and who by careless habits may contaminate food. The army requires revaccination with antityphoid serum every three years and this practice should be followed by the populace.

The National Leprosarium at Carville, Louisiana, reports an average of slightly more than 300 patients during the year. 49 new cases were admitted. 19 patients were released as no more a menace to public health. Six additional patients were listed for parole but on account of deformities elected to remain in the institution rather than be subjected to the hardships and humiliations which are frequently a portion of paroled lepers.

At the recent meeting of the American Association for the Study of Goiter at Seattle, Washington, Doctor William F. Rienhoff, Jr., of Johns Hopkins University, Baltimore, Maryland, received the annual award of $300 for the best essay dealing with the goiter problem. Doctors O. P. Kimball, of Cleveland, Ohio, and E. P. and D. R. McCullagh, Cleveland Clinic Foundation, Cleveland, Ohio, and Robert P. Ball, of the University of Louisville, received honorable mention.

"Doctor Serocold" is the title of a recent book that depicts the work and mental reactions of a physician for twenty-four hours. The story begins at 2:30 a. m. with a call to the deathbed of his partner and ended at the same time the next night with the birth of a child, with busy hours intervening. It is a story of doctors, for doctors, by a doctor. The author is a young Englishwoman, who, after graduating in medicine, assumed family duties and is a writer. Every physician will want to read it.

The Medical Society of the Missouri Valley will hold its annual meeting at the Hotel Fort Des Moines, Iowa, October 15-17, 1930. The program committee reports the following physicians as having accepted invitations to be guests at the meeting: Drs. Bloodgood and Martin of Baltimore, Musser of New Orleans, Judd and Alvarez of Rochester, Minnesota, Wilder, Loyal Davis and Lawrence Meyer of Chicago and Bartlett and Nielsen of St. Louis. These men make up only part of a most carefully and well balanced program.

The right to compel medical and surgical intervention as a life saving measure in the case of minors when the parents refuse or decline or neglect to have the proper attention given was invoked by the Brooklyn Children's Court recently in the case of a 13 year old boy ill with pleurisy. Justice Hanson invoked an old statute which declared a child whose parents refused to him necessary medical or surgical attention in spite of necessity was legally "neglected". The boy was taken to a hospital, operated upon and recovered. This decision is far reaching as a precedent upon which future similar cases will be decided.

Our former Dr. Irving S. Cutter, Dean of Northwestern University Medical School is quoted as stating that experiments now being conducted seem to indicate that old age may be deferred by scientific regulation of body fluids: "It has been shown that retention of fluids in the body may be controlled almost at will, increased or decreased by careful management based upon a biochemistry blood analysis. This study bids fair to be of utmost importance in prolonging the lives of patients suffering oedema." Oedema, he described, is an accumulation of excess fluid in the body tissues, caused by factors closely paralleling those influencing the rapid onslaught of old age. "Scientists have reason to believe that, succeeding in a treatment of oedema, they may defy old age," he said.

Dr. Joseph C. Bloodgood of the Garvan Cancer Research Laboratory of Johns Hopkins University announces that there will be a meeting in the ballroom of Belvedere Hotel in Baltimore, Maryland, Monday, Tuesday and Wednesday, September 15, 16 and 17, 1930, beginning Monday morning at ten o'clock and ending Wednesday evening at nine o'clock, daylight saving time. During these days there will be lantern-slide demonstrations, with four lanterns and screens, on the Diagnosis and Treatment of Diseases and Tumors of Bone. A hearty invitation is extended to radiologists, surgeons, pathologists, and internists who are interested in the subject but have only rare opportunities to observe lesions of bone. But 800 can be accommodated and those intending to attend should make reservations at the Belvedere Hotel early.

THIS MONTH IN MEDICAL HISTORY

September

1821. September 18. Corvisart, Jean Nicolas de, died at Courbevoie near Paris. He was the favorite physician of Napoleon and teacher of Dupuytren, Laennec, and Cuvier. He revived the work of Auenbrugger which had been published in 1770 but forgotten.

1830, September. Charles Murchison, born in Jamaica of Scotch parents. He published a treatise on the diseases of Burmah and in 1873 was presented with a testimonial in London for tracing an epidemic of typhoid fever to an infected milk supply.

1880, September. The first volume of the Index Catalogue of the Surgeon Generals Library appeared. This first volume contained 9,090 author titles, 8,031 volumes, 6,398 pamphlets, 9,000 subject titles of separate books and pamphlets and 34,604 titles of articles in periodicals. This index catalogue has now reached Volume VIII of the third series—45 volumes in all.

1880, September 2. The fourth annual meeting of the Nebraska Dental Society was held in Omaha. Dr. W. F. Roseman was secretary.

1880. September 1. The American Gynecological Society met in Cincinnati with Dr. J. Marion Sims as president. Fordyce Barker, W. H. Byford and others were in attendance. Dr. Byford of Chicago was elected president.

NECROLOGY

William E. Mowery, Scott City, Kansas; Eclectic Medical College, Cincinnati, 1887; in his early career a practitioner at Beaver City, Nebr.; since 1906 located at Scott City, Kansas; was killed in an auto accident near Salina, Kansas, June 24. 1930, aged about seventy-four years.

J. S. Gwaltney, San Pedro, Calif.; Keokuk Medical College, 1891; practitioner at Staplehurst, Nebr., from date of graduation until 1899 when he removed to San Pedro; an able practitioner interested in the civil and social life of his home city; died early in July, 1930, aged about seventy-one years.

William J. Davies, Fremont, Nebr.: Rush Medical College, 1887; an early day pharmacist at Fremont and since 1893 in active practice of medicine; member, Nebraska State Medical Association; sometime president of the Elkhorn Valley Medical society and of the Dodge County Medical society; a man of extensive practice over a large territory and held in high esteem by his large clientele; actively identified with the city's civic activities; a close student as is attested by his large medical library; died August 22, 1930, aged about sixty-eight years. A widow and three children survive. Dr. D. A. Davies, Arlington, Nebr., is a brother.

A. R. Hornbeck, Lincoln, Nebr.; Lincoln Medical College, 1910; practitioner at Murdock for fifteen years following graduation; for the past two years assistant physician at Lincoln State hospital; died of organic heart disease, August 2, 1930, aged about forty-five years. He leaves a widow.

Edward R. Fletcher, Decoto, Calif.; retired; Rush Medical College, 1870; practitioner at St. Paul, Nebraska, for some years antedating 1911 when he moved to California and engaged in ranching; for last three years an inmate of a Masonic institution at Decoto; died early in August, aged about eighty-five years.

E. L. Siggins, Oakland, Calif.; retired; medical college data not available; a practitioner at Columbus, Nebr., for about five years in the early nineties in association with Drs. Mitchell and Martyn; after that in practice in Denver until about three years ago, when he retired and moved to Oakland, Calif.; died August 8, 1930, at an advanced age.

RESOLUTIONS OF RESPECT

In the passing of Dr. James McDowell Patton (June 20th, 1930), the members of the Faculty of the University of Nebraska College of Medicine, have lost a fourth senior member within a few months. Its tragic suddenness, with no note of warning, lent force to the shock of his going, and, therefore, more profound the sorrow felt by his fellows, his devoted patrons, the community and his family. The loss of Dr. Patton to the Faculty, his associates, his clientele, his community, his profession, the state and the world, is momentous. This quiet, unpretentious, modest, tireless, unceasing worker, had attained to so large a place in his field of usefulness and service, that its vastness had not been realized until his going left the void and brought us to the realization of this man's worth and importance to his community and colleagues.

The Faculty of the University of Nebraska College of Medicine records its sorrow and deep sense of loss in the death of Dr. Patton, and requests that the history of his life and attainments become a part of its records, and that the sympathy of this Faculty be extended to his bereaved family.

John Prentiss Lord
Arthur D. Dunn
John J. Keegan.

A SECRETARY OF PUBLIC HEALTH

Whereas, the health of its citizens is our Nation's greatest asset; and

Whereas there is now much duplication of effort and division of responsibility in regard to health matters, as now conducted; and

Whereas Labor, Commerce, Agriculture and other matters of relatively less importance are represented by an officer in the President's Cabinet, while the Nation's health is not so represented, although such representation has been recommended by the American Medical Association and endorsed in their platforms, from time to time, by both of the major political parties; and

Whereas it seems reasonably certain that the various health activities now in operation could be more efficiently conducted if coordinated under a responsible head; therefore be it

Resolved That the American Medical Editors' and Authors' Association, in convention assembled (at Detroit, Mich., on June 24, 1930) recommends and urges that steps be taken immediately for the creation of a Portfolio of Public Health, in the Cabinet, and that a copy of this resolution be forwarded to the secretary of State, Washington, D. C., to the secretaries of all National and State Medical Organizations and to all members of this Association.

Signed, for the Association:
H. Lyons Hunt, Pres.
E. Vandervoort, Sec'y.

ENSWORTH-CENTRAL-NORTHWESTERN MEDICAL COLLEGE ALUMNI

The annual meeting and banquet of the Ensworth-Central-Northwestern Alumni Association will be held in St. Joseph, Missouri, the home of the alma mater, during the week of the Kansas City Fall Clinical Conference, from October 6 to 10, 1930. The arrangements are in the hands of a special committee. The exact date and the announcement of the program will appear in our next issue .

Every member is urged to bring a graduate of one of these three Missouri colleges with him. If you know the address of an alumnus who is not a member, send his name to the secretary in order that he may receive an invitation. For more information, address the nearest officer:

Charles Wood Fassett, M. D., Secretary, Box 38, Glendale, California;

J. H. Buckles, M. D., President, 314 Strang, Kansas City, Kansas;

Leroi Beck, M. D., Assistant Secretary, King Hill Building, St. Joseph, Missouri.

THE SOCIETIES

The annual meeting of the **Elkhorn Valley Medical Society** was held at the Norfolk Country Club July 29, with an attendance of upward of sixty physicians. Dr. P. H. Bartholomew, director of public health, gave a talk on the typhoid carrier, stressing the need of protective vaccination. The program was carried out as given herewith:

Dr. Geo. Hansen, Madison, Nebraska, Case Report on Amaebiosis Cutis.

Dr. John H. Calvert, Pierce, Nebraska. Case Report.

Dr. Steward H. Cook, Randolph, Nebraska, Case Report on Intussusception.

Dr. Clarence Emerson, Lincoln, Nebraska, Surgical Management of Tuberculosis, Pictures and Illustrations.

Dr. Rodney Bliss, Omaha, Nebraska, The Heart.

Dr. J. E. M. Thompson, Lincoln, Nebraska, Fractures.

Dr. C. J. Barborka, Mayo Clinic, Rochester, Minnesota, Obesity.

Doctor Barborka explained why some people gain and others lose on the same diet as due to endocrine imbalance.

Dr. Hansen recited a case, which on consultation with a dermatologist was diagnosed as amebiosis cutis—a disease so rare that only one other case like it has been reported in this country.

Dr. Emerson gave a historical review of the surgical management of tuberculosis.

Dr. Bliss gave a talk, illustrated with specimens, on the pathology of the heart.

Dr. Thomson, illustrated his methods of caring for fractures.

Dr. H. W. Francis, Bancroft, was elected president and Dr. E. L. Brush, Norfolk, was reelected secretary-treasurer.

The **Madison Five Counties Medical Society** met at Tilden August 5. A delightful chicken dinner preceded the scientific program. The program as carried out follows:

"Allergies" by Dr. E .L. MacQuiddy, Omaha.

"Some Recent Improvements in the Diagnosis of Chronic Sinusitis" by Dr. W. A. Cassidy, Omaha.

"Presentation of a case of Situs Inversus Occurring in Identical Twins" by Drs. Barr and Allerton, Tilden.

Doctor MacQuiddy's talk was a thorough exposition of allergic conditions and their treatment. Careful tests are necessary in all cases. It is not enough to assume that ragweed pollen causes hay fever in August, for there are other weeds, notably lamb's quarter, which blooms at the same time as the giant ragweed. Several cases were presented to illustrate the difficulties presented in diagnosis.

HUMAN INTEREST TALES

Dr. L. F. Valentine has located at Mullen.

Dr. Richard Lucke has become police surgeon of Omaha.

A physicians' phone exchange has been inaugurated at McCook.

Dr. E. A. Harvey, Fairfield, attended clinics in Chicago in July.

Dr. H. S. Andrews, Minden, is president of the local Rotary club.

Dr. and Mrs. A. R. Knode have returned from a trip to California.

Dr. and Mrs. C. A. Roeder, Omaha, were on the west coast in July.

Dr. F. W. McCaw and family, Colon, motored to Colorado points in August.

Dr. and Mrs. E. A. Creighton, Red Cloud, have enjoyed a trip abroad this summer.

Dr. J. N. Stoops, Scottsbluff, has taken a month's postgraduate work in ophthalmology.

Dr. and Mrs. Ralph Luikart, Omaha, enjoyed a motor trip to Colorado points in July.

Dr. C. C. Impey, Omaha, motored to Chicago and other middle western points in August.

Dr. Robert S. Martin, Red Cloud, has disposed of his interests and will locate in the east.

Dr. and Mrs. E. C. Henry motored through Wyoming and the Yellowstone park recently.

Dr. T. J. Kerr, North Platte, enjoyed his sixth hunting trip in the wilds of Arizona, in August.

Dr. J. E. M. Thomson, Lincoln, was a guest of the Minnesota State Medical Society at Duluth, in July.

Dr. C. M. Swab, Omaha, who did special work in Europe during the summer returned September 1st.

Dr. H. E. Harvey, formerly of Fairbury, has located in Lincoln to specialize in obstetrics and gynecology.

A slip and fall on the floor of his office caused Dr. A. E. Gadbois, Norfolk, a fracture of a bone in the hand.

Dr. Harold E. Coder, Elwood, has been commissioned a lieutenant in the medical corps of the regular army.

Dr. S. H. Groff, Long Beach, Calif., visited his grandparents in Madison, while enroute to Chicago in August.

Dr. H. V. Bates, Brown Valley, Minn., visited at Monroe, where some twenty years ago he was engaged in practice.

Dr. E. H. Oelke, Wheaton, Ill., a practitioner at Pierce some twenty years ago, visited friends at the latter place in July.

Dr. and Mrs. E. B. Banister, Omaha, have gone to Europe to be gone until December. The doctor will attend clinics in Germany and France.

Dr. William J. Adams, for the past five years police surgeon of Omaha, has resigned and will go to Philadelphia to study orthopedic surgery.

Dr. Carl Amick, Loup City, has opened a 9-bed hospital adjoining his suite of offices, a large residence having been converted for the purpose.

Dr. Alphonso McCarthy, a Greeley county boy practicing medicine in Yukon, Okla., was married recently to Miss Margaret Kroutil of the same place.

Dr. W. P. Hynes, for some time a practitioner at Greeley, Nebr., has accepted a position with the x-ray and pathology departments of Leland Stanford University.

Dr. J. E. Summers, Omaha, was enjoying his overcoat in San Francisco, while we were sweltering in hundred degree temperature in Nebraska the last of July and first of August.

While Dr. Frank Barns, Albion, was on the high seas returning from a European clinic trip, his wife developed an acute surgical condition, was taken to an Omaha hospital and operated upon.

The physicians of Richardson and Nemaha counties, Nebraska, and Brown county, Kansas, have a habit of featuring a tricounty picnic each August and the 1930 event took place at Sun Springs, Kansas, with about 75 present.

BOOKS RECEIVED

MANUAL OF DISEASES OF THE EYE FOR STUDENTS AND GENERAL PRACTITIONERS. Charles H. May, M. D., 13th Edition, Small Octavo, Revised, with 374 Original Illustrations. William Wood & Co., New York. Price $4.00.

PHYSICAL DIAGNOSIS. Richard C. Cabot, M. D., Tenth Edition, Revised and Enlarged, Octavo. William Wood & Co., New York. Price $5.00.

MEDICAL AND SURGICAL YEAR-BOOK, PHYSICIANS HOSPITAL OF PLATTSBURGH, comprising Wednesday Afternoon invitation lectures, Papers of the Cardiac Round Table, the First Beaumont Lecture, Collected Papers by the Staff. 322 pages, 9 mo. cloth cover. Published, 1930, by the William H. Miner Foundation, Plattsburgh, N. Y.

TRANSACTIONS OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA. 8 mo. 381 pages with illustrations.

Joshaway Crabapple says: "This is a funny world. When two trains come together we have a collision, but when two kids come together we have twins."

GOOD ADVICE

This scene takes place in Ireland. Said the doctor: "What's the matter with you?"

"I have severe pains in the side," the patient replied.

"That's easily corrected," said the medico. "Just take one of these pills a half hour before you feel the pain coming on."

ROSTER OF OFFICERS—1930

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Lucien Stark, Norfolk, President-elect	1932
J. M. Willis, McCook, Vice President	1932
F. B. Young, Gering, Vice President	1932
R. B. Adams, Lincoln, Secretary-Treasurer	1931

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H. J. Lehnhoff, Lincoln	1933
W. R. Boyer, Pawnee City	1933
A. E. Cook, Randolph	1933
Morris Nielsen, Blair	1931
Frank Tornholm, Wahoo	1931
H. E. Potter, Fairbury	1931
W. J. Douglas, Atkinson	1931
R. D. Bryson, Callaway	1932
L. W. Rork, Hastings	1932
C. A. Selby, North Platte, Chairman	1932
A. L. Cooper, Scottsbluff	1932

DELEGATES TO THE A. M. A.

B. F. Bailey, Lincoln	1931
R. W. Fouts, Omaha	1932

DELEGATE TO COUNCIL ON MEDICAL EDUCATION OF THE A. M. A.

J. S. Welch	Lincoln

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H. W. von Schulte	Omaha

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J. E. M. Thomson	Lincoln

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THE DEVELOPMENT AND SCOPE OF THORACIC SURGERY*

HERBERT H. DAVIS, M. D., F. A. C. S.,
Omaha, Nebr.

The "Address on Surgery" given each year by the chairman of the surgical section of the program committee of the Nebraska State Medical Association has always been rather general in its nature. The history of medicine is usually stressed.

I have selected the subject of "The Development and Scope of Thoracic Surgery" because I feel that many more chest cases could be benefited in a surgical manner if the physician in charge realized the possibilities. The main development of thoracic surgery has been in the last twenty-five years and surgical text books have not kept pace with this progress. This part of the United States, I am sorry to say, is quite backward in this respect.

For many centuries the thorax, except for empyema and acute infections, has been an unexplored field. The reason for this was the often fatal collapse of the lung, which occurred when the pleural cavity was opened. This is due to the sudden abolition of the normal negative intrapleural pressure. In 1904 Sauerbruch invented the first negative pressure apparatus for anesthesia in these cases. This consisted of a small chamber which was, in reality, a miniature operating room, in which the air pressure was reduced by 8 or 10 mm. of mercury. The head of the patient passed through an opening in the wall of the room so that he breathed air under normal atmospheric pressure. A rubber collar or diaphragm, fitting snugly around the neck of the patient, prevented the entrance of atmospheric air of normal pressure into the negative chamber. The body of the patient, the surgeon, assistants and nurses were in this room with the lowered pressure.

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*Chairman's Address, Section on Surgery, annual metting, Nebraska State Medical Association, Lincoln, May 13, 1930.

The only negative pressure apparatus in the United States was installed in 1908 at the Lennox Hill Hospital in New York, under the supervision of Dr. Willy Meyer. Having an entire room built air tight was so complicated and expensive that there was naturally not much development in this line.

The principle now used is to give a positive pressure anesthesia which consists of introducing anesthesia and air at an increased pressure into the pharynx, larynx, and trachea. A positive pressure apparatus was first used in 1896 by Quenu which was a modified diver's helmet. Tuffier later recommended the insufflation of air through a curved copper tube introduced into the larnyx and trachea. Dr. Matas of New Orleans perfected such an apparatus and it was successfully used by Parham in 1898 in the excision of a tumor of the chest wall. Meltzer and Auer in 1910 introduced intratracheal insufflation. In this a catheter is passed down the trachea almost to the bifurcation. By keeping the pressure constant in this tube any degree of pulmonary expansion desired can be maintained. Now, very often, positive pressure anesthesia is given by a tightly fitting mask applied to the nose and mouth.

EMPYEMA

Empyema is a word derived from the Greek signifying a collection of pus in a cavity. It was used in this sense by Hippocrates, Galen, Aetius, etc. It is probable that incision for drainage for empyema necessitatis was first done by Chinese and Egyptians. The earliest direct references were by Hippocrates who gave the symptoms and signs of empyema. He was the first man to describe succussion. After an illness of fifteen days he would shake the patient by the shoulders and listen for a splash. Then he would open this area by a knife or cautery. On the tenth day after operation he would inject warm wine and oil. He observed that empyema patients who continue to drain after forty days passed into phthisis. Pliny tells of a soldier with empyema, whose life was despaired of by physicians, and seeking relief by death in battle, he was wounded in the thorax, pus was expelled, and he recovered.

Galen emphasized the importance of providing for escape of pus in empyema. He resected ribs and injected warm wine into the cavity. Aetius, a Greek physician of the early middle ages, wrote on the pathology and stated that in certain cases empyema formed without fever. He approved of opening empyemas with the cautery. The Arabs in the early middle ages disagreed as to the advantages of thoracotomy. Vesalius advised operation and stated that no one should die of empyema. He also wrote on thoracic fistulae.

Marcellus Donatus cited many authorities that pus may drain through the urine. Scultetus was the first reference in French; he advised thoractomy at the seventh interspace, and as recommended by Hippocrates, he also injected wine and oil after the operation. The first article in German was by Fienus, who discussed pneumothorax produced by thoracotomy. The first article in England was by Ingram in the eighteenth century showing the greatest advances since Hippocrates. Auenbrugger in 1761, diagnosed his cases by percussion. There was considerable disagreement in regard to operation in the early part of the nineteenth century.

Rib resection and drainage was mentioned by Galen who removed pieces of necrosed rib in the case of empyema necessitatis. However, Walter in 1860, was first to resect a sound rib. Roser was said to be the first to propose resection of rib, but did not actually do it until 1865.

Further advances in the treatment of acute empyema were made by the empyema commission during the late World War. They found that early operation was a frequent cause of death and advised delay until thick pus is formed and the underlying pneumonitis is relieved. Bell of the empyema commission states that draining empyema cases show a negative nitrogen balance on 1500 calories intake per day. Therefore, they must receive a high caloric diet.

Simon in 1869 was probably first to recommend rib resection to reduce the size of the cavity in empyema. Estlander in 1879 directed attention to the principle of multiple rib resection and obliteration of chronic cavities. Schede in 1890 described the extensive resection that bears his name. After turning up skin and muscle flap of larger extent than the cavity the whole of the chest wall underneath was resected, the skin muscle flap being then allowed to fall against the collapsed lung. Delorme in 1892 put forth the new principle of obliterating the cavity by re-expansion of the lung. Fowler did the first operation of this type on October 7, 1893. In this procedure the thickened pleura is stripped from the lung. Ransohoff in 1906, in a case in which he could not separate the thickened pleura from the lung, made grid-iron incisions 6 mm. apart through the thickened pleura, allowing considerable expansion. The principle of multiple operations was advocated by Keller in 1922.

LUNG ABSCESS

Hipprocrates pointed out that a lung abscess sometimes burst into the bronchus, and cured itself spontaneously; occasionally it ruptured into the pleural cavity and had to be drained. Garre stated that during 100 years, up to 1893, only twenty-two authentic cases were reported in the literature. Murphy in 1898 in addresses on thoracic surgery was almost twenty years beyond his time. In 1903 Garre collected 278 cases. In the last few years there have been many articles on the etiology of acute lung abscess and the question is still disputed as to whether the main factor is aspiration or embolus.

PULMONARY TUBERCULOSIS

James Carson of London was urging production of artificial pneumothorax as early as 1821. Forlanini of Paris in 1882 was the first to practice and develop it. In 1885 the first operation to relax a tuberculous lung by thoracoplastic operation was done by de Cerenville of Lausanne.

Brauer was first to realize that clinical success in a thoracoplastic operation depended upon obtaining a pulmonary compression somewhat comparable in amount with that obtained by artificial pneumothorax. The operation on this principle was first undertaken by Friedrich on December 11, 1907. The patient received a very good result. This thoracoplastic operation has been modified by many since. One of the later advocates of this operation was Sauerbruch, now of Berlin.

Extra pleural pneumolysis was advocated and performed by Tuffier of Paris in 1891. In 1910 he began using a human fat graft to close the cavity in this operation.

Jacobaeus of Stockholm in 1913 began dividing small pleural adhesions through a thoracoscope. He severed adhesions with a galvanocautery. Compression through elevation of the diaphragm by section of one phrenic nerve was done by Stuertz. Felix and also Goetze in 1922 proposed phrenic exeresis as a substitute for simple phrenicotomy.

At the present time unilateral tuberculosis is treated with artificial pneumothorax. If this fails, due to adhesions, and the patient is losing ground phrenic exeresis should be done followed usually at a later date by paravertebral thoracoplasty, usually done in two stages. The mortality is very low and in properly selected cases the result is excellent. To gain the best result one should not wait until the terminal stages before doing these operations. In this type of work there should be very close cooperation between the internist and the surgeon.

BRONCHIECTASIS

The diagnosis of bronchiectasis has been greatly aided by the injection of lopiodol and radiology. Sergent and Cottenot in 1923 first diagnosed bronchiectasis in adults by intratracheal injection of lipiodol through the cricothyroid membrane. At the present time there are many different methods of introducing lipiodol tending to make it much more simple. An x-ray following lipiodol injection gives an excellent reproduction of the bronchial tree.

Phrenicectomy has been of some value in treatment. In severe cases Lilienthal advocated lobectomy, reporting thirty-one cases in which fifteen died, fifteen were completely cured, and one he was still working on. He applied this operation, however, only to cases that were very severe and who would rather die than live in the condition they were.

Graham later has advocated lobectomy by means of a cautery in multiple stages. In this the mortality is fairly low. He advocates this operation much more for the multiple lung abscess than for bronchiectasis. In the former he obtains very excellent results but is not overly enthusiastic about its use in bronchiectasis. Study of the nasal sinuses should never be overlooked in cases of bronchiectasis.

TUMORS

Because of lack of time I will discuss the subject of tumors very briefly. There have been many benign tumors removed with very excellent results. Not much has been done, however, for malignant tumors. Primary carcinoma of the bronchus seems to be on the increase and can be diagnosed fairly early by lipiodol injections of the bronchial tree and x-ray. This shows the change much like one gets in the case of x-ray of a carcinoma of the gastro-intestinal tract. By early diagnosis, some of these cases may possibly be cured in the future by cautery lobectomy.

PERICARDIUM AND HEART

Injuries of the heart were considered 100% fatal up to the time of Hallerius. In the early part of the sixteenth century he was the first to advance the theory that wounds of the heart are not necessarily fatal and can heal. Classic articles by Fisher in 1868 recorded 452 cases, 90% of which were fatal. December 1881, Roberts of Philadelphia first suggested that it would be rational to attempt suturing wounds of the heart. In 1882 Black first sutured lacerations made in the hearts of rabbits. In 1887 Reed of Cincinnati successfully sutured a wound of the pericardium. The first successful suture of the heart itself was by Rehn of Frankfurt on September 9, 1896. In fifty-eight cases collected by Ballance from records of the late World War, 75.8% recovered. At the present time many of these cases are not operated that should be. Cardiorrhaphy for injury of the heart should be promptly undertaken when indicated, especially if hemorrhage is occurring.

Treatment of mitral stenosis by section of the mitral valves is still in the experimental stage. This was first proposed in 1902 by Samways and Brunton. The main work has been done by Cutler and his associates. Allen and Graham have developed a cardioscope permitting actual section of the valve under direct vision. Jarotzky suggested making an artificial communication between the auricles. A mitral stenosis complicated with an open foramen ovale has a comparatively good prognosis. With further development of Cutler's cardiovalvulotome and the cardioscope it is hoped that mitral stenosis will enter the realm of surgery with promise of relief.

Operation for pulmonary embolus as proposed by Trendelenburg is a rather radical operation in which the pulmonary artery is opened and the embolus extracted. There have been successful cases but possibly these cases would have recovered without the operation.

Drainage of the pericardial cavity for purulent pericarditis was first done successfully by Romero of Barcelona in 1819. It is quite necessary to drain the lowest accessible portion of the pericardium. The pericardium may be drawn out and sutured to the skin and irrigated through two way rubber catheters. These cases have approximately 60% chance of cure. Autopsy observations reveal this condition is too frequently overlooked and that even when diagnosed the patient has not been given the chance of obtaining surgical cure.

Cardiolysis is an operation to remove the bony wall of the chest overlying the heart and release pericardial adhesions. Peterson and Simon at Brauer's suggestion first performed this operation in 1902. Decompression of the heart is used chiefly in children with decompensation. In this the ribs overlying the heart are removed. In properly selected cases the results are quite good.

SYMPATHETIC SYSTEM

Surgery of the sympathetic system in general is rather in the experimental stage as yet. This very naturally applies as well to the chest. More than 300 operations on the autonomic nervous system in the treatment of bronchial asthma have been reported. In about one-half varying degrees of improvement have been reported. A few brilliant cures in hopeless cases have been reported. Successful results have followed interruption of the vagus alone as well as the sympathetic system alone. Probably the most logical intervention is the initial severing of both systems at the posterior pulmonary plexus. Many asthmatic patients have a sufficient degree of emphysema and fixation of the thorax greatly to limit the respiratory exchange. In some of these a mobilizing operation should be performed on the thoracic wall, if the cardiac function is not already too greatly impaired.

DIAPHRAGM

Diaphragmatic hernia is probably more common than generally thought. Ambros Pare first described this condition in 1610 when he reported two cases of traumatic origin. Naumann in 1888 operated the first case of diaphragmatic hernia in which the hernial contents did not prolapse through the thoracic wall. Arnsparger states that diaphragmatic hernia had not been recognized in life more than ten times previous to 1908. About this time the Roentgen ray with opaque mediums to outline the abdominal viscera for the diagnosis of these cases became fairly well standardized. The operative approach to these cases may be thoracic, abdominal or combined abdomino-thoracic. Closure of the hernial opening is necessary to relieve symptoms. Paralysis of the diaphragm by phrenic neurectomy is helpful in closing large hernial openings when considerable tissue has been lost. The operative risk is not great and the results are quite satisfactory.

CONCLUSIONS

Recent years have shown tremendous advances in thoracic surgery. Bronchoscopy both for diagnosis and treatment by the removal of foreign bodies and also irrigation of the bronchi has been a tremendous step forward. Injection of lipiodol to demonstrate variation in the bronchial tree is too infrequently used. Many cases of doubtful chest pathology should receive lipiodol injection.

Cases of chronic bronchiectasis, multiple lung abscess, empyemata which do not heal, tuberculosis, chiefly of the unilateral type, etc., should see the thoracic surgeon at least in consultation. Many such cases which are now ordinarily considered hopeless can be cured, or tremendously benefited with very little risk by proper surgery.

PELVIC IRRADIATION IN CANCER OF THE CERVIX*

PALMER FINDLEY, M. D.,
Omaha, Nebr.

Paradoxical as it may seem, there is much encouragement in the management of cancer of the cervix. This is so because of the introduction of radium. It is within the memory of men present when cancer of the cervix was regarded as hopeless. Later was introduced the radical operation of Wertheim and a portion of these cases were saved though the operation was never a popular one because of its inherent difficulties and the high rate of primary mortality. Then came radium and with it has come renewed efforts to eradicate this dread disease. With improved technic the results obtained from the application of radium have steadily improved until the present time when the percentage of five year cures is as great from the application of radium as it has ever been as the result of radical surgery.

The statistics from Heyman are of interest in that they graphically portray the relative merits of the two forms of treatment. Heyman collected the reports of 5,024 cases of cancer of the cervix, all of whom were operated. Of this number there were 18 per cent of five year cures. There were 3,659 of this number that fell into groups one and two; they were early and hence operable in that the lesion appeared to be confined to the cervix. There were 36.5 per cent of five year cures in this number.

Again Heyman collected the reports of 3,512 cases treated with radium, of which number 16.3 per cent obtained five year cures. From the total number 960 cases were selected as early cases and in this group there were 34.9 per cent of five year cures. It will, therefore, be seen that the ultimate results from the two forms of treatment were about equal but it is to be remarked that there was 17 per cent of primary mortality in the surgical group and less than two per cent in the radium group. In addition and in favor of radium is the shortened hospital stay and the greater degree of comfort following the application of radium.

The cervix affords most favorable conditions for the application of radium. It is accessible and admirably adapted to cross firing.

It is altogether a different proposition with cancer of the body of the uterus. Here it is not possible to accurately apply the radium. In the early stages cancer commonly develops in the horn of the uterus where it is difficult to bring the radium in direct contact. The grave danger is in masking the symptoms for a time sufficient to permit the cancer to grow beyond the reach of surgery. In all such cases, however great the hazard, I agree with Graves that the uterus should be removed. A very large proportion, some 75 per cent. can be cured by surgery.

In discussing the treatment of cancer of the cervix reference should be made to preventive measures. I am convinced that it is possible to prevent the occurrence of full half the cancers of the cervix by the timely repair of the lacerated cervix and the proper management of cervicitis. By timely repair of the cervix I mean the immediate repair where possible, just as in the case of the torn pelvic floor. Graves reported 4,000 immediate repairs of the cervix. In only four of this number did cancer appear later and of this four there were two in which the cancer was recognized so soon after the repair as to give rise to the inference that the cancer antedated the laceration. For want of a better remedy radium is the remedy par excellence in the management of cancer of the cervix and there is every promise that the results will continue to improve as the technic of its application is perfected.

GROUP 1

Referring to the accompanying illustrations (Heyman) it will be observed that in Group 1 the cancer is in its earliest stage, it which the lesion is confined to the cervix and without disintegration. No symptoms are manifest in this stage—there is no bleeding, no pain, no discharge of any sort that can be charged to the growth. Here the diagnosis can only be made by doing a biopsy and submitting the excised piece to a competent pathologist. Cancer of the cervix in its earliest stage is a microscopic disease.

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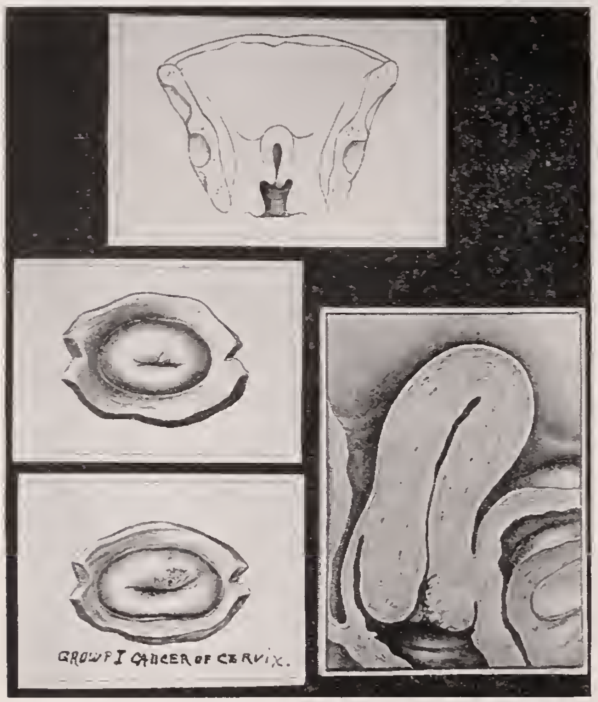
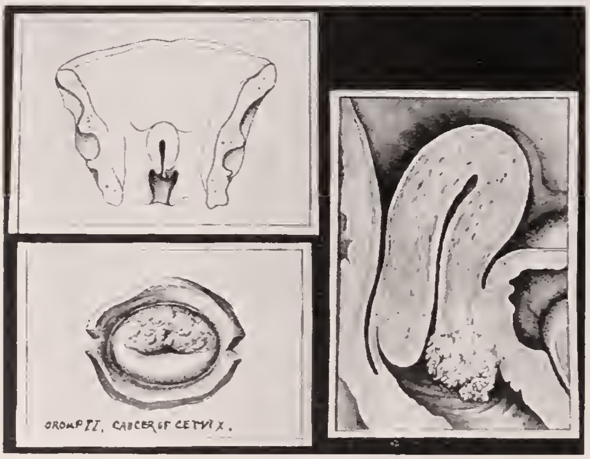
*Read before annual meeting, Nebraska State Medical Association, Lincoln, May 13-15, 1930.



GROUP 2

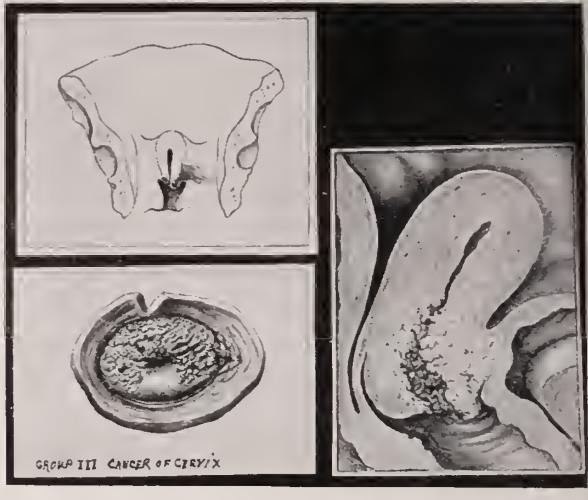
In Group 2 the disease has advanced but has not invaded the tissues beyond the confines of the cervix. It is no longer essentially a microscopic disease. Disintegration has begun and the invaded area bleeds freely and is more or less friable. There is more or less persistent bleeding and an acrid, watery or offensive discharge. In this stage there is no pain nor is there loss of weight.



In both Groups 1 and 2 either radical hysterectomy or radium should effect a permanent cure.

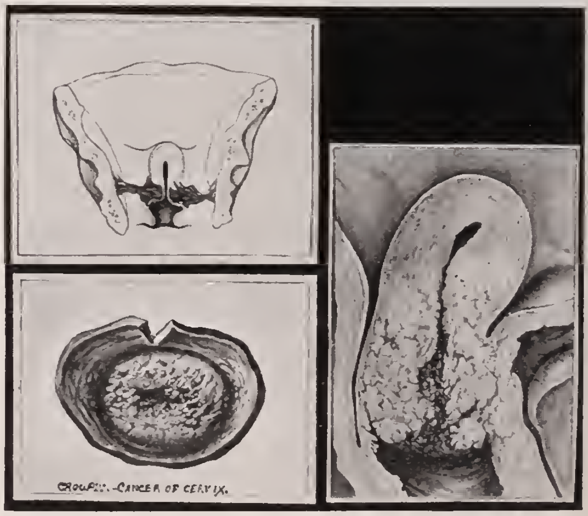
GROUP 3

In Group 3 not only is the cervix widely invaded but the parametrium is invaded as well. The disease is no longer confined to the cervix. No longer can we speak of the lesion as operable; radium with or without the additional aid of the x-rays can alone effect a cure, as indeed it does in about one case in ten or twelve. In addition to bleeding and foul discharges we may now expect pain and beginning loss of weight.



GROUP 4

Group 4 is the most advanced stage and the best that can be hoped for is to stay the progress of the disease and relieve distressing symptoms. This can be done with radium. Hemorrhages and foul discharges disappear, pain may disappear to a surprising degree and in an incredibly short time; the patient gains weight and strength and for a period of varied duration she feels that she has been cured as indeed she has been in a



very small per cent of cases. I would not believe that such cases could be apparently cured for a period of four and even eight years had I not seen them under my own care and observation.

DISCUSSION

D. T. QUIGLEY, M. D. (Omaha): I want to take a little different angle on the situation as presented by Dr. Findley. He has given us the early beginnings, but for the many years we have been engaged in this work, especially the earlier years, our work was a dumping ground for all the hopeless cases. I do not think Dr. Findley or any gynecologist of equal rank will doubt today that early cancer of the cervix is curable by radium. The fact is, Dr. Findley said even things of lesser activity might avail in early cases.

We may assume all women who die of cancer of the cervix go through a period in which they are curable by radium. My point is that with radium a good many cases are curable which the average gynecologist or physician might think incurable.

Thirteen years ago, Dr. LeRoy Crummer sent me a lady with a tumor about the size of a baby's head. I found we were dealing with an adenosarcoma of the uterus. We gave her treatment. Three months later, we curetted her again and found adenosarcoma again. We gave the second treatment. That was in 1917. This morning I talked to her. She is living at Ashland. She was unable to come down with me because she had guests. She had relatively a large mass. We put our radium deep in the center.

Another is an extensive case involving the cervical canal and the cervix, extending half-way through the vaginal canal. She was sent by Dr. Charles Kenner. He considered her hopelessly inoperable. He thought we could prolong her life.

Case No. 3 was a case involving the cervix and the body both. Cases No. 2 and 3 both got about three and one-half to four years. No. 3 was referred by Dr. Pritchard. They came as hopelessly inoperable cases. They had an extensive treatment as described by Dr. Findley. I think that is the correct attitude to assume. Cases No. 2 and 3 both recovered, much to the surprise of the doctors who referred them. I have them here today, without a sign of any pelvic disease whatever. I show you these two clinical cases in support of Dr. Findley's proposition that pelvic irradiation is worth while.

C. B. PEIRCE, M. D. (Omaha): I should like to emphasize one point which Dr. Findley injected into his discussion which has been, I think, rather thoroughly worked out both abroad and in this country. I refer to the fact that extensive radiation therapy over the lateral portions of the pelvis, in addition to massive doses of from 2,400 to 3,600 milligram hours. with adequate filtration, is producing in this man's hands a pronounced improvement in the records of long-period cures.

I think we might retain the period of five years for judgment of cure. Sometimes we are disturbed in that the five-year period seems not quite long enough. Sometimes we have recrudescence at the end of eight years. In most cases where recrudescence occurs after a period of five years, it does not necessarily mean the lesion has at the moment been inadequately coped with. It has been entirely destroyed for that period of five years. In cases of recrudescence later, I think we are dealing with an imbalance on the part of the individual who is not able to cope with a certain deficiency in the wild production of the neoplastic cell. These are not necessarily to be considered as failures upon the part of the irradiating therapy.

I. C. MUNGER, M. D. (Lincoln): I should like to express my great appreciation for Dr. Findley's presentation of this subject, as well as Dr. Quigley's discussion of it. It is a subject which is of vital importance to practically every branch of adult medicine. We are fortunate indeed to get this information on it from men who have had so extensive an experience from which to draw their conclusions.

I can add little or nothing to what they have said further than to stress one or two points. We recognize the fact that the time to cure cancer is before it is cancer—to work on those precancerous conditions. That must be done through education of our women. That leads me to say I think we should stress more forcibly the fact of the necessity of regular physical examinations, particularly during what we are pleased to call the cancer period of their lives. I think it should be considered from thirty-five years, on. Particularly is this true in cancer of the cervix, because we know it is more apt to appear in the woman from thirty-five to fifty than of other parts, particularly cancer of the uterus. We meet it more frequently in women past fifty years. So that much can be accomplished in the way of education, through lectures, etc., that have been carried on, particularly in the last year or two.

As to the use of radium, some two years ago I heard Dr. Crile make the statement at that time for a period of two years they had not operated a single case of cancer of the cervix, no matter in what stage, recognizing the fact that radium is superior to surgery in any stage of cancer of the cervix. In more advanced cases that might be considered inoperable, we have seen the great possibility of radium therapy in such cases as that, demonstrating that really advanced cases which appear to be hopeless will be restored to health.

The possibility of making large masses of cancerous tissue disappear by proper use of radium has been repeatedly demonstrated. The proper application must largely be determined by experience in treating all types of cases. Proper radium treatment brings about complete destruction of the largest mass of carcinoma. It is no less capable of dealing with the smaller areas involved. The proper technique in distribution of radium therapy is not alone in the primary tumor, but in giving thought to the lymphatic zones about it. It is true in both operable and inoperable cases, particularly in the case that would seem to be inoperable, because in any case radiation is bound to reach much farther than is possible to reach with surgery. It would seem we should get away from so many operations, which are performed in these cases frequently with disastrous results, when by the use of radium we can accomplish so much more.

Of course, the dosage will depend in a measure upon the size of the tumor, distributing the radium in broken doses throughout the tumor, so that one feels he is reaching the surrounding tissues.

B. R. McGRATH, M. D. (Grand Island): Dr. Findley may be considered an authority upon this subject. He was one of the first to recognize the benefit of radium in cancer of the cervix. We have been fortunate in getting this splendid lecture of his today.

I can add very little. I want to emphasize one thing brought out by Dr. Quigley, which is the use of radium in cases we have hitherto considered incurable. The first of Dr. Quigley's cases is one of cancer of the body of the uterus, which, as Dr. Findley has said, is probably better treated by surgery than radium, although in this case radium proved successful.

In cancers of the cervix, we have no standard by which we can judge the amenability of the cancer to the use of radium. I have in mind a patient who came with a huge growth from the cervix and a considerable secondary growth on the wall of the vagina. Her case was considered hopeless. To lessen the hemorrhage and the foul discharge, I cauterized the growth in the cervix. I discussed it frankly with her and told her I considered it hopeless, but if she wished, I would use radium. It probably offered the only hope. She wanted the radium used. This was several years ago, and the woman is absolutely well. The last reports I had were that she was in perfect health.

In our present state of knowledge and present advance in the use of radium, I think we make a mistake if we consider any case of cancer of the cervix as absolutely hopeless.

DR. FINDLEY (closing): I would not want to leave the impression that my zeal in the management of cancer of the cervix with radium leads me so far as to say surgery has no place. It has not had a very large place in management of cancer of the cervix, because the only operation considered adequate was removal of the uterus with part of the vaginal walls and all of the parametrium and dissection of the lymph nodes. Such an extensive procedure had a mortality ranging from 15 to 25 per cent. It was not undertaken except by men of more than ordinary skill.

As the statistics of Heyman say of heart lesions, in the best of hands, the immediate toll from surgery has been so much greater, as well as the discomfort and disability which follow, that radium is rapidly becoming the method of choice.

I want to emphasize what has been tried out in handling cases in Group 3 and 4. I think we can assure almost any case from six months to three years of comparative comfort. The discharges will cease and they will gain in weight and the pain will cease, and they will think themselves well. If radium could do no more than this, it would do well. Five-year cures have been as high as 7 to 10 per cent. That is a clear gain over surgery, because these groups have never been amenable to surgery.

CARDIAC EMERGENCIES*

ADOLPH SACHS, M. D., F. A. C. P.,
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Rheumatic fever is a disease that is to be dreaded because it often leaves its ravages behind in the form of seriously damaged hearts.

It is a disease of childhood and young adults and hence jeopardizes the efficiency of part of our future generations. The public has been greatly enlightened about the dangers of cancer and I feel more publicity should be given to this ever increasing malady, so that more could be done to prevent some of the serious sequelae which it causes.

Rheumatism, syphilis and arterio-sclerosis are the enemies to be combatted if we wish to preserve the most vital organ that we possess. Infections of all types must not be regarded lightly for often times even though the infection may be a mild one, the sequelae left are permanent and no amount of treatment can change them. I am not an advocate of promiscuous tonsillectomies or dental extractions, but if any benefits are to be derived, the cause must be removed early so as to avoid serious results.

More sunshine, food, and rest are required to combat rheumatic fever because this is a chronic disease similar to tuberculosis and must be treated in a like fashion. The original infection may be mild, but its activity may continue unless proper measures are instituted to check its progress. Salicylates, rest, sunshine and food are the sheet anchors. Other agents may be helpful, but until we have a more specific therapy at hand, the prevention of heart disease from rheumatic fever will be nil unless we realize that it is a chronic disease, and we protect our patients by rest until activity is no longer present. The initial infection may be compared to lues because in lues the patients acquire their initial lesion and ten to twenty years later its serious sequelae appear, such as cerebro-spinal lues, tabes, paresis, or cardio-vascular syphilis. In rheumatic fever we may have our initial infection and ten or fifteen years later, our seriously damaged hearts appear. Mitral stenosis is a chronic disease and its damage is permanent, being more severe in some cases than in others.

Heart disease is a common malady, and should be given more careful consideration than it usually receives, because mistaken diagnoses often result in irreparable damage to the patient. The physician should guard his patient against a damaged heart, but likewise over-emphasis of cardiac murmurs or mild hypertensions to a neurotic individual makes a chronic invalid out of a normal patient. The mere fact that a murmur exists is not justification for medication, because certain types of murmurs are innocent, and need no treatment. The number of cardiac neuroses are increasing and unless we as physicians properly evaluate symptoms and physical signs, we will help to increase this unfortunate neurosis. A cardiac neurotic is a miserable sufferer and his neurosis should be prevented to the same extent as the prevention of organic lesions.

Fatigue is often a symptom of a neurosis, but likewise it is often the initial symptom of an early bacterial endocarditis or a subacute bacterial endocarditis; therefore it should be regarded with all seriousness until it is proven that no serious ailment is producing it. Subacute bacterial endocarditis rarely attacks a normal valve, but has a predilection for a previously damaged valve. Its onset is often insidious and unless kept in mind, might easily be overlooked. The positive blood cultures for streptococcus viridans are often a late finding, hence the diagnosis must usually rest on clinical symptoms and physical findings. The clubbing of the fingers, the enlarged spleen, petechias, various infarcts, pallor, the irregular fever and sweats, sensitive finger tips, and the progressive nature of this disease usually makes the diagnosis of subacute bacterial endocarditis easy, but early cases often will tax the diagnostic acumen of any physician.

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*Read at the Nebraska State Medical Association, annual meeting, May 14, 1930.

It is not always possible to have all instruments of precision at hand, especially in a rural practice and for that reason bedside diagnosis should be impressed on all medical students so that they will use their hands, eyes and ears, by which method most cardiac diagnoses can be made. It is important that our diagnoses be more accurate so that better opinions of prognoses may be at hand. The stethoscope is a most valuable instrument, but should be used last in making cardiac diagnoses. Don't listen to a heart first, but get a good history and then follow with a systematic routine of inspection, palpation, percussion and then ausculation. A definite diagnosis can often be made before ausculation is used.

A good cardiac aphorism to remember is that "The muscle is of more importance than the murmur, and the rythm is of more importance than the rate." Cardiac murmurs, if properly timed, are of great aid in our general scheme of diagnosis, but many functional or innocent murmurs are misinterpreted. Many apical systolic and basal diastolic murmurs are of no importance, but are frequently overestimated and useless therapy is instituted. If the myocardium is intact and functioning well, very rarely is any treatment other than prevention needed.

Cardiac irregularities are more readily recognized since the use of instruments of precision, such as the electro-cardiogram. A great many of the irregularities however can be diagnosed without laboratory aid. I do feel that the electrocardiogram is of great value and if more physicians would learn the mere fundamentals so as to be able to read their own tracings, they would be surprised how much aid it would offer them in diagnosis and prognosis. There are a number of irregularities that can only be diagnosed by a cardiogram, such as certain incomplete blocks, bundle branch blocks, arborization blocks, most cases of auricular flutter, etc. It often tells us of a damaged muscle that can be determined in no other way.

The following chart gives the best classification of arrhythmias:

CARDIAC ARRHYTHMIAS

1. Sinus arrhythmia.
2. Premature contractions (Extra-systoles).
    a. Auricular
    b. Ventricular
    c. Auriculo-ventricular
    d. Interpolated.
3. Heart Block.
    a. Prolonged P-R interval
    b. Incomplete
    c. Complete (complete dissociation)
    d. Bundle branch block (right and left)
    e. Arborization block
    f. Sino-auricular block.
4. Auricular Flutter.
    a. Paroxysmal
    b. Permanent.
5. Auricular Fibrillation.
    a. Paroxysmal
    b. Permanent.
6. Paroxysmal Tachycardia.
    a. Auricular
    b. Ventricular
    c. Junctional.
7. Pulsus Alternans.

Ventricular escape, nodal rhythm, pulsus bigeminus, trigeminus, etc., are not included, but the above classification includes the most important forms of arrhythmia.

It is not within the scope of this paper to describe the different forms of arrhythmia, but a few clinical points might be of value to some of us, merely as a review.

Sinus arrhythmia is really of little importance because it rarely if ever, has any serious significance. McKensie said if he found a sinus arrhythmia alone one might be sure of a normal type of rhythm. It is often found in children, after fevers, in nervous individuals and normal people. It is usually obliterated by exercise which increases the pulse rate and is easily recognized by merely being a difference in the spacing—that is, there is a waxing and waning of the pulse rate. It is always increased by deep breathing, and in times past, was known as a respiratory arrhythmia. Sinus arrhythmias are all due to alterations of vagal tone. A rather abrupt slowing of the heart accompanied by a lowering of blood pressure is often responsible for fainting attacks and especially found in people with an irritable heart.

Premature contractions or extra-systoles of ventricular origin are readily recognized. The patient feels a sensation as though the heart turns over, or stops, or they may recognize the extra beat. Ventricular extra-systoles have a compensatory pause, or cardiac repose which is a great aid in recognizing this irregularity. Extra systoles rarely have ventricular rates over 120, and exercise usually obliterates extra-systoles. One can usually recognize an extra systole by ausculation because the extra beat that occurs is usually quite characteristic. Auricular, junctional and interpolated extra systoles are diagnosed by the electrocardiogram, and will not be discussed here. Extra systoles are frequently found in neurotics, tobacco smokers, and are caused by various toxic agents. They have no serious significance unless accompanied by a myocardial degeneration. In combination with other serious physical signs, they add to the gravity of the lesion.

Complete heart block with idioventricular rhythm can usually be recognized clinically, however the prolonged P-R intervals, bundle branch blocks, arborization blocks, etc., are chiefly diagnosed by electrocardiograms, and will not be discussed here.

Sino-auricular block, or dropped beat can usually be recognized by the long pause that occurs, but may be confused with extra-systoles or long pause in a sinus arrhythmia. If one listens to a heart for several minutes and sees that the patient is breathing normally, very little difficulty arises. Most all hearts which have a rate of thirty-five or below are complete heart blocks. Certain bradycardias have a slow rate, but rarely as low as thirty-five. This is apex rate and not pulse rate because large pulse deficits may be confused with heart block. A nurse's record should always be checked unless she is taught how to use a stethoscope. I feel that all nurses should be taught the use of the stethoscope and sphygmomanometer because it can often be of great service in evaluating symptoms and in making diagnoses.

The rhythm of complete heart block is generally quite regular, the rate is not affected by exercise or by the administration of atropine or amyl nitrite. Vagus bradycardias may be eliminated by atropine. Each heart beat of a complete block is accompanied by a first and second sound and often very faint muffled sounds of auricular contractions may be heard during the long diastole. Definite recurring changes in the intensity of heart sounds which are independent of respiration are a definite sign of block in slow rates, the difference in intensity being due to the times that the auricular and ventricular contractions occur together. If they occur almost together, reduplications will be heard. The auricular contractions can be observed in the jugular veins of the neck if prominent. The auricular wave is seen in the jugular pulsations. Likewise waxing and waning of venous pulsations in the neck are suggestive of heart block if they occur during normal respiration.

Stokes-Adams syndrome which occurs with syncopal attacks may be confused with epilepsy unless careful examination of the heart is made. These are always serious because patients of this type rarely live over two years.

Incomplete heart block may be suspected in rates of forty or fifty. The sudden halving of the ventricular rate is always suggestive of it (two to one block). Exercise doubles the ventricular rate and rest again halves it. Amyl nitrite also obliterates it.

Rates of 120 to 160 in elderly people, if regular and constant and no other cause be found, may indicate auricular flutter. If during a fluoroscopic examination we can see a two to one block, the diagnosis of flutter can also be suspicioned. Most cases of flutter are only diagnosed by an electrocardiogram and are not of frequent occurrence.

Auricular fibrillation is the most prevalent type of arrhythmia. It is found at some time in most all cases of mitral stenosis. In people past forty, with arterio-sclerosis it is a very common form of arrhythmia. It might be described as the crazy heart having absolutely no rhythmicity of any kind. It is well termed an absolute arrhythmia. Exercise increases this irregularity and very little difficulty is experienced in making the diagnosis. Multiple extra-systoles may occasionally confuse us, but exercise obliterates extra-systoles and increases auricular fibrillation. It may occur in attacks or be permanent. It is the nicest form of arrhythmia to treat because it usually responds the best to therapy.

Ventricular fibrillation occurs but needs no comment, because if it lasts over a few minutes, the patients cannot live.

Ventricular and junctional paroxysmal tachycardias are only diagnosed by electrocardiograms and are not very frequent in their occurrence. Ventricular paroxysmal tachycardia is always serious and only seen in rare cases of badly damaged hearts. Junctional paroxysmal tachycardias are rare and need no comment. The ectopic focus is around the junctional node and is never clinically recognized.

Paroxysmal auricular tachycardia is the most common form and its sudden onset and sudden cessation usually make the diagnosis. At first the patient is always terror stricken with each attack, but later they become accustomed to them and are not so greatly alarmed. Other attacks of tachycardia rarely have the sudden onset or offset that is so characteristic of paroxysmal auricular tachycardia.

Alternation of the pulse can be clinically recognized by the use of the sphygmanometer. There is a large pulsation followed by a small pulsation and these are constant. Pulsus bigeminus may confuse us, but this is rarely constant day after day. This is the only form of arrhythmia that cannot definitely be diagnosed by the electrocardiogram. It may be suspicioned by the alternating sizes of the T-waves, but is best recognized by a pulse tracing.

Cardiac prognosis is a rather difficult subject to handle, but a free discussion of it often adds to our information. Experience is our best guide to cardiac or any other prognosis, but a few remarks may not be amiss. The more experienced the practitioner, the more guarded are his prognoses, because all of us have had cardiac patients that should gracefully have died and lived in spite of us.

The family doctor can usually prognosticate hearts better than a hurried visit to a specialist, because he has had the opportunity of observing that heart under stress and strain and possibly may have seen its reserve during a case of congestive failure. There are no function tests for cardiac reserve that will stand the acid test because cardiac muscle, similar to skeletal muscle, differs in different individuals. I believe that the only test for cardiac reserve that is of any value, is its response to exercise. The exercise may be any you choose to use as a routine, namely running up stairs, walking definite distances, running, jumping, stooping, hopping, etc. Personally I use the old hopping test which is as reliable as any. Certain obese patients do not give reliable exercise response, and likewise certain muscular individuals used to exercise do not give satisfactory response so that one must choose the patient in order to interpret the findings properly. A highly neurotic patient may have a marked acceleration that does not give a normal response but this is due to stress and strain and not due to a poor cardiac reserve. I usually have the patient hop 100 times, first taking the pulse rate, then again taking the pulse rate after hopping, and accurately watch the time it takes the rate to return to normal. Normally the pulse rate is increased after exercise and returns to normal within two minutes. I have found blood pressure readings of little value in cardiac reserve tests.

Patients with mitral stenosis should be cautiously exercised because syncope or hemoptysis may occur. Hypertensions and myocardial degenerations of all types must be closely watched and cut down the amount of exercise used. Dyspnea and fatigue are abnormal signs that occur after exercise and add a valuable guide to cardiac reserve.

Careful and accurate diagnoses of myocardial lesions must be made if any guide to prognosis is given. The muscle is far more important than the valve. Mitral lesions withstand congestive failure far better than aortic lesions. No diagnosis as to type of valve lesions is safe during congestive failure. Only during compensation should lesions be differentiated. Mitral murmurs are heard best with a bell stethoscope in a lying posture. Exercise may be necessary to bring out a mitral stenotic murmur. Aortic lesions are best heard in a sitting posture with a diaphragm stethoscope. A mitral lesion with an auricular fibrillation responds far better and oftener to treatment than an aortic lesion. An aortic lesion may stand abuse for a long period because nature compensates with such marked hypertrophy, but once it breaks its compensation it rarely returns to normal as well as mitral lesions. Sudden deaths are more frequent in aortic than in mitral lesions. Coronary vessels are always a danger in aortic lesions. In hemiplegias under 40 years of age, always look for lues; if not found, suspicion emboli from a mitral stenosis.

If you have a paroxysmal fibrillation, look for a toxic goitre if no other lesion is found. An auricular fibrillation that does not respond to digitalis should make you think of a toxic goitre, especially an exophthalmic goitre.

If you have an accurate metabolic rate taken, and it is over plus forty, it is usually a toxic goitre rather than heart disease. Congestive failure due to toxic adenomas stand thyroidectomy very well and often return to excellent functioning hearts. Tachycardia of exophthalmic goitres respond excellently to properly timed thyroidectomies, but fibrillations often leave definite signs of cardiac damage and should be kept at rest longer after thyroidectomy than normal rythms.

Prognosis in hypertensions depends largely upon cardiac reserve. The younger the patient, the more serious is the hypertension. Fundus examinations and blood chemistry should be had in all cases of hypertension because they are a great aid to prognoses. The more retinal hemorrhages with swelling of the disc, the worse the outlook. This, with large amount of nitrogen retention makes the prognosis more grave (the so-called malignant hypertensions). Essential hypertensions usually do quite well.

Mitral insufficiency is a safe lesion to have, and rarely shortens life expectancy to any great degree. Mitral disease is a slow process over years. Luetic aortic lesions are rapid and progress under our own eyes.

Some men claim that an aortic stenosis with an aortic insufficiency helps the prognosis.

A hypertension with some cardiac dilatation may enlarge the stenosis of a mitral valve. Levine states that obese children are less prone to chorea and that obesity is an aid in the cure of rheumatic fever. Freckled, long-fingered, thin children are more subject to rheumatic fever. Rheumatic fever is a famished disease. Cold, damp climates have more rheumatic fever than very warm climates.

A fibrillator rarerly gets a subacute bacterial endocarditis. Subacute bacterial endocarditis rarely or never attacks a normal valve. Coronary disease is a degenerative disease and often runs in families. The man who inherits good blood vessels is indeed fortunate. Inverted T waves, especially if found in all leads, is a sign of muscle damage.

The question of anesthesia in heart cases is often a serious problem. It is impossible to listen to a heart and say that it will or will not stand an anesthetic. A careful history and general physical examination is necessary before any opinion should be given regarding anesthesia. The kidneys are just as important as cardiac reserve. Persistent thymuses are more common than most physicians realize and many deaths that are attributed to heart failure have this thymic habitus.

A careful history regarding mild attacks of congestive failure and all clinical and laboratory examinations including electro-cardiograms should be made before advising operations of election in cardiac patients. Obese people with myocardial degenerations do not tolerate long operations. It is impossible to accurately judge all hearts that will tolerate surgery because the prognosis often depends on *who* is operating rather than *will a heart stand* the operation. All cardiac patients should be given proper amount of rest and preparation before any operation is attempted.

Aneurisms increase the risk of any operation. Cases of coronary sclerosis who have had severe anginal attacks do not tolerate any operation very well. Toxic exophthalmic goitres who are on the up wave tolerate surgery very poorly. Even the slightest operation may cause death.

Choice of anesthetics in heart cases is also a complex problem. A great deal again depends on who the surgeon is that uses the anesthetic, and also how familiar he is with its use. A local anesthetic in a highly neurotic individual offers more shock and cardiac fatigue than general anesthesia. Some people are sensitive to novocaine and this factor should also be considered. I feel that it is more important to pick the operator than the anesthetic.

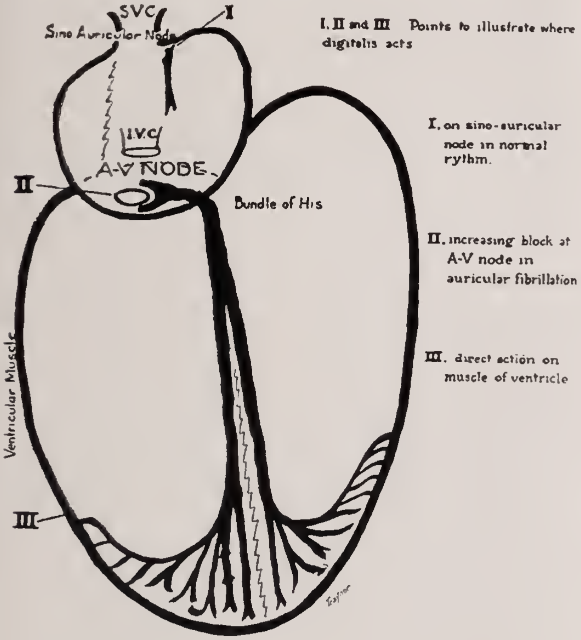
Spinal anesthesia causes a marked drop in pressure which must be considered before advising it in any cardiac case. Old hypertensions do not tolerate it as well as other types of cases. Short anesthetics are always advisable. Give sufficient sedative before anesthesia so that all possible struggle can be avoided. Pick the anesthetic for the individual patient rather than depending on general rules of any kind.

The marriage problem in cardiac cases is often a hard problem to solve. Should girls with mitral stenosis marry? This problem usually solves itself because if you advise them not to, they usually get married anyhow. Many girls with mitral stenosis are married and have borne children well; however, it is our duty to warn them and see that they get the best of care with as short labors as possible. Here again cardiac muscle and reserve is of more importance than the valve. If a mitral stenosis has had previous attacks of fibrillation, they as a rule do not tolerate pregnancies very well. They usually have a stormy course and it may end fatally. Aortic lesions do not tolerate pregnancies as well as mitral lesions; however, here again there are many exceptions to the rule. I have a patient with a marked aortic and mitral lesion who had several attacks of congestive failure, whom I advised against marriage. She now possesses a lovely young daughter, and is in better health herself than she has been in years.

The interruption of labor is rarely indicated in cardiac cases unless marked signs of congestive failure are present. Rest and proper management will carry most of them through very safely. The attendant dangers of abortions in cardiac cases are often as much danger as labor itself. I feel that all angles must be carefully weighed and if interruption is indicated, it should be done early.

The heart is one of the most mistreated organs in the body. It often is over treated and frequently receives treatment when none is needed. The old adage that "a small amount of digitalis can do no harm, so why not give it" is very poor therapy. Fortunately the doses are usually so small that it does no harm, and it likewise does less good.

This Chart is from Roth's book on cardiac arrhythmias and is modified slightly.


SVC
I
Sino Auricular Node
I. II and III Points to illustrate where digitalis acts
I.V.C
A-V NODE
II
Bundle of His
I. on sino-auricular node in normal rythm.
II. increasing block at A-V node in auricular fibrillation
III. direct action on muscle of ventricle
Ventricular Muscle
III

SCHEMATIC DRAWING OF A TRANSPARENT HEART. SHOWING AURICLES VENTRICLES, SUPERIOR VENA CAVA (SVC) AND INFERIOR VENA CAVA (IVC) HEAVY SHADED AREAS REPRESENT THE "SPECIFIC SYSTEM" (*KEITH-TAWARA-HIS SYSTEM*)

Digitalis is the backbone of cardiac therapy if properly handled. Its indications are three; first, and most important is congestive failure; second, permanent auricular fibrillation or flutter where the ventricular rate is high, and third, as a therapeutic test. Any form of congestive failure requires digitalis and there are only a few contra-indications for its use. These contra-indications are first, heart block; second, exophthalmic goitre; third, effort syndrome.

Congestive failure from any cause requires digitalis, and it usually is of great value if properly used and in doses of sufficient size to be of service. It is likewise necessary to know your preparation and see that it is being absorbed. The mere fact that the bottle is labelled "Digitalis" is of no value, but look for digitalis action, especially increased force of beat, slowing rate, and improvement of all signs of congestive failure. If no digitalis action is observed within 24 hours, either the preparation is not good, or it is not being absorbed. Often times a general purge is required before absorption will take place. There are a certain number of fibrillators who have an achlorhydria, and the administration of dilute hydrochloric acid will aid in its absorption. I have also seen thyroid extract aid the action of digitalis in certain types of obesity.

In permanent fibrillation digitalis is of great value, and should be used continuously without interruption, unless toxic symptoms such as nausea, vomiting, disturbed vision, etc., arise. If toxic symptoms occur, it is usually due to faulty technique in administering the drug. Digitalis increases the cardiac block at the A-V node, and hence it is of such great value in fibrillators. It lessens the ventricular rate and thus takes a great deal of work off the ventricle. It assists in changing auricular flutter to normal rhythm. It occasionally changes a fibrillator to normal rhythm. However, some claim this is mere coincidence.

In normal rythm its action depresses the sinus node and thus slows the rate. Whether this action is vagal or on the sinus node is of little clinical importance. It also directly stimulates the myocardium to increase the degree of systolic shortening of the fibres. This effect occurs whether the pulse is regular or not, and hence explains its value in congestive failure with normal rhythm.

Digitalis is used as a therapeutic test in certain obscure cardiac pains. Certain cases of mitral stenosis have precordial distress on exertion which is due to mild congestive failure. These are greatly benefited by the use of digitalis.

Heart block is usually made worse by the use of digitalis, but if congestive failure is present, it may cautiously be used. Toxic exophthalmic goitres are usually made worse by digitalis. If ever used, it should be stopped at least ten days before operation, or the operative risk will be greatly increased. If signs of congestive failure are at hand, some men justify its use, but be sure and discontinue it prior to operation. Toxic adenomas seem to tolerate it better than exophthalmic types of goitre. However, the same rule holds true; stop its use prior to the operation. Cases of effort syndrome likewise do badly on digitalis, and it should not be used in these individuals. The type of preparation is a matter of personal preference. The powdered leaf or the standard tincture are the preparations most often used. It takes 1½ grains of the powdered leaf or one cubic centimeter of the tincture of a standardized preparation for every ten pounds of body weight to digitalize a patient. One and one-half grains are excreted daily by each patient, so that one must add 1½ grains for each day consumed in digitalizing the patient. After the patient is digitalized he can be kept on a daily ration which in most cases is the excretion dose or 1½ grains. Some people, however, excrete it more readily and it often takes 1½ grains twice a day to keep the patient digitalized. The infusion of digitalis is of value, but must be used in large doses. It takes 60 times as much of the infusion as it does of the powdered leaf.

Digitalis may be used rectally as well as orally and in about the same dosage. Intravenous preparations are of value if needed. Strophanthin intravenously in the dosage of 1/120 grain is of value in emergencies to tide a patient over until digitalis acts. It has some danger and should not be used in previously digitalized patients. It requires two and one-half to three drops to make one minim, so know the size of your dropper if you prescribe your digitalis in drops. The block system of four days digitalis and four days of caffeine is rarely indicated, and is of little value. If your patient gets nauseated, be sure it is the digitalis causing the nausea and not the congestive failure. If your patient is digitalized or shows its toxic effect, stop its use and replace it with caffeine.

Some men claim that digitalis does not act in fever, but this is erroneous because anyone who has treated many pneumonias knows that it is of decided value when needed. Routine use without indication in pneumonias is recommended by some men, but is condemned by most cardiologists. Digitalis is a toxic drug and one should never increase a patient's toxemia by its use unless indicated. Routine digitalization prior to operation is another pernicious habit and should be condemned. If a patient needs digitalis, give it, but also allow sufficient time for rest and digitalization so that compensation is well established before the operation is attempted.

It usually takes larger doses in children to digitalize than in adults. Old people do not tolerate digitalis well and often times one of its toxic effects appears in the form of delirium or a psychosis. Whether it is the digitalis or the congestive failure, or the cerebro-arterio-sclerosis that causes the psychosis is a greatly disputed point. Personally, we have seen a number of cases with this toxic delirium that by the withdrawal of the digitalis the symptoms disappeared, and I would recommend that some caution be used in giving it to elderly people. Digitalis is of no value in shock, so why burden our patients with it. The operative case that suddenly goes bad from shock needs adrenalin, heat, hypodermoclysis, caffeine or strychnine, but do not get panicky and use the whole pharmacopea. More cases die from over-medication than under-medication.

Quinidine is a drug to restore rythm and not to be used in the place of digitalis. Old cases of mitral stenosis have mural thrombi so that some caution should be used in using it in these cases. We use six grains every 2 hours for five doses, and continue it four days to one week; if normal rythm is not restored in this time, its value is questionable. One should give a test dose of one grain before using massive doses because some people are sensitive to quinidine. The patient should be closely watched and preferably at rest so as to avoid any possible danger. Discontinue its use when normal rythm is restored. Quinidine as a daily ration of six grains per day often prevents paroxysmal fibrillation. Its greatest value is in the permanent fibrillations to restore normal rhythm. Quinidine with strychnia will obliterate some extra systoles. It has been used in all forms of arrhythmias and occasionally with success, but the most spectacular results are in auricular fibrillation. Caffeine is an excellent stimulant for emergency use, and also to be used in place of digitalis when toxic symptoms arise. Strychnia is a cardiac tonic and not a cardiac stimulant. Camphor is of very little value in congestive failure. It may be of some value in cases of shock. Adrenalin is a wonderful drug to be used in shock and occasionally to be used as a direct stimulant to the heart muscle when injected intra-cardially, but is of no value in congestive failure.

Novarsurol, salyrgen and other mercurial salts are of value as intravenous diuretics to reduce edema, and thus lessen the cardiac load. Diuretin, theocin and like drugs also lessen the cardiac load by their free diuresis. Calcium chloride and ammonium chloride are also valuable diuretics. Barium chloride is reported to be of value in heart block. Thyroid extract is also of value in some cases of heart block.

Venesection as an emergency measure for an embarrassed right heart is a wonderful aid and should never be forgotten.

Morphine is one of the best cardiac tonics that we possess and affords more rest in cardiac cases than most other hypnotics. Bromides, amytol, luminol and like sedatives are all of value in selected cases to aid in giving rest.

Cardiac emergencies arise in such conditions as pulmonary embolus because circulatory failure is a prominent symptom. Morphine, rest, and such stimulants as caffeine, are indicated. Pulmonary collapse should be recognized and the proper treatment instituted, such as turning the patient, the oxygen tent with 40% oxygen, and measures used to remove the mucous plug by bronchoscopy. Only such stimulation as needed is required in these cases.

Nitroglycerine and amyl nitrite are sheet anchors in various vascular spasms such as in angina pectoris and abdominal anginas. Acute indigestion is a misnomer, and is frequently a mistaken diagnosis for coronary thrombosis. Mild cardiospasms are occasionally mistaken for anginas, and are readily relieved by soda bicarbonate.

Paroxysmal auricular tachycardias are often relieved by vagal pressure, by pressure over the eyeballs, swallowing, turning of the head and various postures. The patient usually learns how best to relieve himself. Morphine, intravenous digitalis, and other drugs are of occasional value. Through digitalization and the continued daily ration of digitalis will occasionally lessen the frequency of such attacks. Patients rarely die with this form of arrhythmia unless it is of long duration or occurring with badly degenerated hearts. It is usually very alarming to the patients until they become accustomed to their attacks. Bromides and quinidine are also occasionally of value.

The rationale of cardiac management is careful and thorough examination and diagnosis, with treatment as indicated, thus avoiding empiric medication.

EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS

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The early diagnosis of pulmonary tuberculosis would more often result if physicians came to realize the large number of cases that they see, when consulted from time to time, for various other reasons. We, at the hospital, do not see many of the early cases but in order to do the most good for every one concerned this is the type of case that we should be getting. At least 50% of our cases are so far advanced that it is almost impossible to do anything for them, outside of care. Unfortunately it is the far advanced cases that people are most anxious to get into a hospital. I realize that the general practitioner is a very busy man and does not have the time to go into details with all of the cases that he sees, but histories, if properly taken would make one suspicious of tuberculosis and then further examination would confirm the diagnosis, in many of these cases.

Some of the symptoms that one finds early in the disease and which should make one suspicious are as follows: Fatigue or loss of strength and endurance which is not relieved by ordinary rest—a sort of "run-down" or "all-in" feeling; cough and expectoration especially where it persists for several weeks; pleurisy; anemia; fistula in ano (61% subsequently develop tuberculosis and 20% of these cases have been proven tuberculous by animal inoculation); hemoptysis, especially if amounting to a half teaspoonful or more, blood streaks may or may not mean tuberculosis but large amounts deserve careful investigation; loss of weight amounting to 5% or more within a period of three or four months and not the result of some other known cause. Fever of 99 or over occurring daily for more than a few days should be checked up on and the cause determined. A rapid pulse, one of over 85 or 90, that persists following 30 minutes of physical and mental rest is very suspicious; indigestion; loss of appetite; dyspepsia, or other similar complaints should make one suspicious of tuberculosis particularly if they do not clear up entirely with proper medication; nervous irritability is frequently present in tuberculosis and many cases give symptoms of "nervous prostration"; night sweats; susceptibility to colds; a hoarseness not otherwise explained and disorders of menstruation. I realize that most men in general practice treat the majority of such cases by giving tonics, sedatives, digestives or advising the patient to take things a little easier and sometimes operating, but the diagnosis should be made in these cases and a systematic treatment instituted. I know that many cases of tuberculosis recover without ever having known that they had the disease. I am aware, too, that many physicians think that doctors connected with sanitoriums are sort of peculiar and anxious to diagnose tuberculosis when it does not exist. It is not even popular with patients to be diagnosed tubercular. I do not want you to diagnose from symptoms, but when some of these symptoms are present a thorough physical examination should be made including inspection, percussion, and auscutation. Use your x-ray and do laboratory tests but don't wait to find germs present in the sputum before diagnosing tuberculosis — half of our cases do not show the germs present unless frequent examinations of the sputum are made, and not even then in some of them. It is usually the late cases that have germs present in the sputum in sufficient numbers to be readily found. Skin tuberculin tests are of no value in adults. Many of the symptoms that I have given are present in many other diseases unrelated to tuberculosis, requiring a careful differential diagnosis.

There are in this state over 400 deaths annually from tuberculosis and statistics show that there are at least 9 to 10 active cases for every death, a total of nearly 4,000 active cases, constantly demanding care in Nebraska.

I feel that there are several reasons why tuberculosis does not get as much attention as it should, first: The medical colleges do not give any special attention to the disease and for that reason many doctors pass it by lightly and take it for granted that it is unimportant. Second: General hospitals will not care for cases of tuberculosis and hence have no clinical material for students to study or investigate. I feel that general hospitals should set aside a ward or part of a floor for cases of this kind and no doubt such an arrangement would reduce the death rate very markedly. Third: It is not popular to diagnose tuberculosis. People do not want to be told that they have it. I believe that most people prefer to be told that they have a spot on the lung or an acute bronchitis or some other diagnosis than the proper one.

The tubercular cases that I saw as a medical student were the very far advanced cases, cared for mostly at the County hospital just before death. They are of no clinical value to a medical student as they do not appear in any way as suffering from the same disease as the early case about which I am speaking.

Many people resent a diagnosis of tuberculosis thinking it means a far advanced case which is the way they visualize tuberculosis. The medical profession is more or less to blame as this was the general idea not so many years ago.

No chronic disease is more easily curable, if taken in time. The rest treatment, as it is known, is by far the best method of handling the disease. Put the patient to bed for at least a week or ten days. If the temperature becomes normal and remains so allow him to get up a few minutes a day. If the temperature and pulse still are normal or return to normal after 30 minutes rest, more exercise may be prescribed. A little exercise is added at a time until the patient is up several hours a day. Rest at the beginning of treatment is absolutely essential. Even those of our patients who are not running a temperature must take regular rest hours from 9:00 till 11:00 a. m., 1:00 to 4:00 p. m., 6:30 to 7:30 p. m., and retire at 9:30. Patients with a temperature of 99 or above spend practically 24 hours a day in bed. If the patient is underweight try to get him back to normal. No special foods are needed with early cases. Three well balanced meals is the best method of feeding—don't feed between meals —don't give raw eggs—don't stuff the patient. A glass of milk with each meal and one or two cooked eggs a day is usually sufficient.

Change of climate is not essential. To quote Dr. John W. Trask of the U. S. Public Health Service, "The common idea is that somewhere far off there must be a region with a climate specially suited to the tuberculous. When the population of what is now the United States was mainly along the Atlantic coast consumptives were advised to go to the Alleghenies. As the populated area extended westward and more became acquainted with the Allegheny region, the advice was to go to the pine woods of Michigan, then to Minnesota and the Rocky Mountains, then to the Pacific coast, and finally to the arid southwest. No locality has a climate that is favorable all the year, and most localities in the United States have favorable climates for a considerable portion of the year if one will only take advantage of them. In one's quest for a favorable climate one must not forfeit suitable food, rest, and peace of mind, or gain a more favorable atmosphere in which to live at the price of homesickness and worry. The consumptive can usually obtain the most favorable conditions for recovery, including an outdoor life, suitable food, rest, medical attention, and nursing, at or near his home. Leaving home, except to go to a sanatorium, is fraught with much danger, unless one is financially able to meet all possible demands, and it should be most carefully considered even then."

Hillier, of London, says: "Climates of every variety have at one time and another been recommended for consumption. High altitudes and the seaboard, warm climates and cold ones, the ocean and the desert, the equator and the poles. The underlying truth is at last being recognized. The chief virtue of these resorts is the open-air life."

Flick, of Philadelphia: "Expert medical advice is the most important factor in effecting a cure, and doctors at home are now as well up on the disease as doctors at climatic resorts, though formerly this was not so. A long period of treatment is required, no matter where undertaken, and proper treatment at a distant resort is prohibitive for the poor, and often embarrassing for the well to do. I desire to go on record as believing that there is no therapeutic value in climate."

Latham, of London: "Most physicians who have had much experience of sanatorium treatment, and who have watched patients for some years after their return from a sanatorium, agree that as far as possible all patients should be treated under the same climatic conditions as those which they are likely to experience in their subsequent life."

Minor, of Asheville, N. C.: "If you have money enough to go away to a favorable climate and get there, good board, care, and accommodations, it will be a great help to you; but change of climate is not the first or most important thing, and, unless you have money enough to get in the climatic resort as good or better conditions than you have at home, you had much better stay at home and spend what money you have in getting the best possible conditions you can there."

Walsh, of Philadelphia: "If a case of consumption cannot be cured in its home climate, it cannot be cured anywhere."

Francine, of Philadelphia: "At first and for a considerable time mountainous regions or high altitudes were considered essential sites for sanatoria, as the potency of climate per se was exaggerated or at least not rightly understood. Nor can this question be considered settled even today, though it seems probable that the importance of the other factors in sanatorium treatment, i. e., rest, fresh air, diet, and regular regimen, are receiving more just appreciation than heretofore. The feeling seems to be gaining ground in the profession that it is not so much a particular climate which accomplishes results as it is fresh air, and plenty of it, in association with the other factors in modern treatment. The view is held by some with wide experience to substantiate their claims that change of climate is unnecessary and even unadvisable and that quite as good results may be obtained by treating the patient in his own home; these latter enthusiasts have swung completely over, and disregard climate while emphasizing the importance of care and treatment. It seems probable that the just view lies somewhere midway between these two extremes."

Pottenger, of Monrovia, Cal.: "Given the same treatment, climate is valuable. Patients of small means should remain at home under intelligent guidance instead of stinting themselves in a better climate. Favorable climate is not essential, but it makes the cure easier, and at the same time favors it."

To summarize, the treatment of tuberculosis consists in rest, fresh air, good food, but not over feeding, mental contentment and medical supervision. Change of climate is not necessary. Early diagnosis and rest are the main things to keep in mind.

THE THERAPEUTIC VALUE OF BLOOD IN PEDIATRICS*

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We have at our command an ever present therapeutic agent which is deserving of more consideration and attention in the prevention and treatment of disease with its sequelae, which has been handed down with the traditions of medicine.

The therapeutic value of blood had its origin in the 17th century, but for many hundreds of years before that time the idea of transferring blood from the vein of a human being to the vein of a human being suffering from loss of blood or afflicted with disease, had been present in the minds of those who carried on medical tradition.

Certain allusions in the fragments of early Egyptian history which have come to us give every indication that even the ancient people had some knowledge of intravenous therapy. The Wisdom Book of Tanaquila, who had married the wife of Tarquin, reads: "The ancient refers to a custom which appears to be blood transfusion", and Hofphite's Treatise on Anatomy clearly refers to it. Ben Israel Manasse, a Jewish Rabbi of Amsterdam, showed to LaMartinere, a copy of an ancient Hebrew manuscript wherein he read that Naam, leader of the armies of Ben Adad, King of Syria, afflicted with leprosy, consulted physicians, who in order to cure him drew out the blood from his veins and put it in that of another.

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*Read before the annual meeting Nebraska State Medical Association, Lincoln, May 14, 1930.

The sacred books treasured by the priests of Apollo likewise make mention of this operation and similar references may be found in the Researches of Eubages. Pliny speaks of it but only in condemnation, and the same is true of Celsus.

In Vellari's Life of Savonarola, an account of the unsuccessful attempt made by a "jew doctor" to prolong the life of Pope Innocent VIII by means of blood transfusion reads as follows: "Accordingly the blood of the decrepit old Pontiff was passed into the veins of a youth whose blood was transferred into those of old Pontiff. The experiment was tried three times and at the cost of the lives of the three boys. caused probably from getting air into their veins, but no effect was obtained; he died on the 25th of April, 1492".

A. H. Matthews comments that it is an error arising from the forgetfulness of two important facts:

1. That the idea of this operation could not occur to any one to whom the circulation of the blood was unknown.

2. That the phenomenon of the circulation of the blood was not discovered until the 17th century.

It is stated that a certain Jewish physician undertook to restore the Pope's health and for this purpose he drew all the blood out of three young boys who immediately died, and with their blood he prepared a draught which in spite of the doctors' protestations, failed to improve the sick Pontiff's condition.

The saving virtue of drinking human blood was not new. The idea, regardless of the success or failure of blood transfusion as a therapeutic measure at this early period of history, was present in the mind of man at this time.

With Wm. Harvey's discovery of the circulation of blood the way was opened for more intravenous therapy.

From the 17th century there were frequent revivals of interest in blood transfusions and intravenous therapy. The work of Carvel upon the blood vessels has made possible the present day technic of blood transfusion. The direct transfusion we owe to the work of George W. Crile.

The technic of the laboratory is now able to group and match bloods of different individuals, so that there is now practically no danger in direct blood transfusion. The development of apparatus such as the Unger and Scannell has simplified the process so that the blood transfusion is one of our most valuable therapeutic procedures.

The values of blood as a therapeutic agent are many in the field of pediatrics. One has but to scan the literature and he will be impressed at once by the number of conditions in which it can be used. The value of transfusions in infancy and childhood is firmly convincing when the results are carefully analyzed. These results can be obtained in any of the three methods chosen.

1. The subcutaneous method of administering large amounts of blood, even to the premature infant.
2. The intraperitoneal route.
3. By direct route from vein to vein.

The first method chosen is selected because of its simplicity and the avoidance of the technic necessary for grouping and cross agglutination. There is certain evidence at times to show that absorption does not take place. This usually is in the infant that needs it most. The direct transfusion should be the method of choice in a case of this type. On the other hand because of its simplicity and the infrequency of non-absorption, does not overrule the procedure.

The second method or intraperitoneal route is also chosen because of its simplicity. Here, however, grouping and cross agglutination is necessary. Again, in this method there is certain evidence at times to show that absorption does not take place.

The third method, direct transfusion, is the method of choice. We have used all methods successfully in our practice.

The results obtained in transfusing the leukemias has not been successful as a life saving measure. It helps prolong life but no permanent results are obtained.

The results we obtained from infections and secondary anemiaes are the same as is found in the literature. The results in nutritional disorders with secondary anemia are very good.

It is also a valuable measure for pre-operative and post-operative conditions such as occur in our mastoids and empyemas.

I gave, with good results, a transfusion to a migrating type of erysipelas, who had had a marked suppurative cervical adenitis. The haemoglobin and red count was raised and the patient finally recovered.

The diarrhoeas with toxemia, mucous and bloody stools, make a very good response with intraperitoneal injections of blood.

CASE NO. 4045

Baby, age 10 months, weight 14 pounds.

Family history was negative. Mother had a boy 6 years, living and well.

C.C.:

1. This baby had periodic gains and marked losses in weight. The stools were mucous and bloody and had become much worse with a recent upper respiratory infection.
2. Had refused to gain consistently under all types of treatment. In desperation I sent baby to hospital and gave 90 c.c. of blood and 600 c.c. normal saline solution intraperitoneal. He improved rapidly and made an uneventful recovery and has had no trouble since. This child is now 5 years of age.

Within the last 10 days I gave a lobar pneumonia patient who had measles four weeks preceding, an intramuscular injection of 90 cc of citrated blood from a convalescent measles case. Within eight hours the temperature was normal and remained such. This case had drilled along for four weeks following the measles without recovering until the injection of blood.

L. Krahulik and L. A. Kock of the Long Island College Hospital, published in the *American Journal of Diseases of Children* for January, 1930, an article in which they made a study of 763 cases of blood transfusions in infancy and childhood, and state that they were much impressed by the large number of conditions which were benefited by its use. They called particular attention to the value of transfusion in pneumonia and its complications, otitis media, pleural effusion, mastoditis and pyuria.

Hemorrhagic disease of the newborn, a condition where there is fresh blood in the vomitus and is passed from the bowel and in the urine, also from mucous surfaces of the body, can be specifically treated by an injection of 30-50 cc of whole blood intramuscularly or subcutaneously. It seldom has to be repeated.

CASE NO. 5214

This case was seen and treated at the request of Dr. Harry Taylor.

Newborn, age 5 days.

The personal and family history is negative. Birth history normal delivery.

C.C.:

1. Was bleeding from lips, gums and soft palate.
2. Vomiting and with fresh blood.
3. Stools showed macroscopic and chemical test for blood.

Diagnosis: Hemorrhagic disease of newborn.

Treatment: 1. 30 c.c. of blood taken from the mother and injected subcutaneously.

Result: Uneventful recovery. Normal baby at 7 months.

Cerebral hemorrhage of the new born, a much more recognized entity in the last few years should not only have the cerebral spinal pressure relieved by lumbar or cistern puncture, but should have 30 cc of the mother's blood injected intramuscularly. If further hemorrhage is not stopped the intraspinal and cranial pressure soon returns.

CASE NO. 4168

This case was seen and treated at request of Dr. Wesley Becker.

Newborn, age 1½ hours.

Personal and family history negative. Normal delivery. B. weight 7 pounds.

C.C.: Difficult and irregular breathing and lifeless.

Physical Examination: Showed the baby at first glance to be an extremist gasping for breath, irregular respiration, pupils dilated and fixed, body flaccid. The heart rate was 130-136. Cyanosis of hands and feet.

Diagnosis: Cerebral hemorrhage of newborn.

Treatment:

1. Lumbar puncture and 20 c.c. straw colored fluid removed.
2. Injection of 30 c.c. of father's blood intramuscularly and subcutaneously.
3. Glucose and water by mouth.

Result: Within 12 hours baby was able to nurse, and made an uneventful recovery. This child is now 3½ years old, perfectly normal.

Hemorrhage or loss of blood by accident or injury, thereby endangering the patients life by loss of blood volume, should always have a blood transfusion and normal saline.

Prematurity is an indication for subcutaneous injection of blood. The premature infant so often is too weak and unable to digest and assimulate sufficient food for their metabolic requirements. Increasing the blood content 50% or more is a life saving measure. Premature babies may require more than one injection of blood. The baby should not receive over 50% of the total quantity of blood already possessed by him. According to Moore and Dennis, 50 cc per kilogram can be given to the newborn subcutaneously.

Autogenous use of blood is suggested very favorably by Dr. Von H. Kraus, a German author, in the *Munchener Medizinische Wochenschrift,* in which he has treated 15 cases of lethargic encephalitis and reports three of his interesting cases. He states that encephalitis lethargica and the severe cases of head grippe constitute a serious menace for the life or at least for the complete recovery of those who suffer from these conditions, and their treatment is a great responsibility for the doctor. These constantly recurring sporadic cases since 1918 mostly resulted in death or Parkinsonianism, but were always bedfast for long periods and resisted all forms of treatment. For the past two years I have treated such cases by the injections of their own blood. I have had good results by this method of treatment, but have seen little or nothing in the literature concerning it. I will quote two of the three cases reported by him.

> Case II. M. B. Became ill with temperature, 38.5 c.c. apathy and slight facial paralysis. Two days later paralysis of facial nerves, both left and right. Paralysis left arm and left leg. On the day following there was paralysis of the muscles of deglutition and togue. Diagnosis: Encephalitis Lethargica. On the 2nd day quinadia had been injected without results. On the 4th day 10 c.c. of the patient's blood. On the 5th day the patient could swallow and following that there was slow return of movements of arms and legs, still later disappearance of facial paralysis. No other medication was used. In four weeks the patient was discharged, well, to take up her occupation.
>
> Case III. A child, age 3½ years. Became ill with temperature 40.5 c. Within 4 days he was unconscious and had incontinence of urine and feces. Diagnosis: Lethargic encephalitis. Because of difficulty in finding a vein this patient was treated with blood serum of case No. II, the above case; two doses of 3 c.c. each. After 2 days unconsciousness and incontinence ceased, but a pneumonic infection began. This was treated with the result of complete convalescence without any manifestations of cranial involvement.

In his comments he states the remarkable fact is evident that similar cases treated previously by other means always died or developed Parkinsonianism. Perhaps this is to be explained by reduced virulence of the causative organism. Further experimentation by different men with reporting of results would be worth while.

In view of the fact that specific antibodies appear in the blood during the course of many infections, it would naturally be expected that this might occur in all our exanthema. Upon this assumption the serum of patients convalescent from scarlet fever has been used in the treatment of persons acutely sick with the disease. This was practiced first in 1897. Sixty-nine cases were treated subcutaneously with 20-40 cc of convalescent serum. Results reported were indifferent. This method was again revived in 1912 by Reiss and Jungmann together with Kock and Hertz. They treated a series of severe cases of scarlet fever with beneficial results. They gave 40-100 cc intramuscularly.

From 1918-1924 Dr. Abt reported a series of cases treated with convalescent serum. Dr. Abt comments as follows on the results: "There is quite constantly a fall of temperature beginning 2-4 hours after the injection and reaching its limit in 12-24 hours. In purely toxic cases the temperature falls to nearly normal and shows little tendency to subsequent rise. In cases with septic complications also the fever falls at first but usually rises again somewhat later. More striking than the fall of fever is the improvement in the general condition of the patient. Delirium subsides. the pulse becomes slower and its quality improves, cyanosis disappears and in 12-24 hours the patient is on the road to recovery, while before this the patient appears almost hopeless. The most marked results occur in early cases. These terminate almost by crises, the temperature becomes normal, the rash fading rapidly and the patient enters at once on convalescence".

Regardless of antitoxins in use today there are times when convalescent blood is a life saving measure. The presence of allergy might make it impossible to use antitoxin containing horse serum. Human blood or convalescent serum would eliminate this factor.

Mumps falls almost, in same place, as scarlet fever relative to treatment, although there is this advantage, that mumps can be prevented by the injection of 6-8 cc of convalescent serum. When one stops to think that 3-5% of all deaf mutes in the United States are a result of mumps, then immunization is surely worth while in the presence of any epidemic. One case of deafness so far this year has been called to my attention.

The recent and still present epidemic of measles has impressed me strongly of the value of convalescent blood, blood serum and blood of parents who have previously had measles, in the treatment and prevention of this severe disease, a disease which with its complications and sequelae deserves a great deal more attention. For many years medical science has been attempting to discover an efficient method of preventing measles. The results are that that day has arrived if the Tunicliff serum proves out as successfully as the experiments would seem to indicate.

In 1916 Nicolle and Conseil published the first definite results on the treatment and prevention of measles by means of serum obtained from convalescents. Following this work, Park and Zingher took up the study of convalescent serum. In 1920, Degokwitz of the University of Greifswald, Germany, announced the results obtained by himself and associates in the use of adult blood in more than 1,000 cases. The results were very favorable for even where the disease was not prevented, the injected blood lessened the severity of the attack. These observations have been confirmed by Park and his co-workers by extensive investigations carried in New York City.

Regardless of the Tunicliff serum we have at our command a simple prevention which can be used most effectively upon our children. Thirty cc of blood taken from an adult who has had measles and injected intramuscularly into the child will prevent measles or give a mild attack of measles. This should be given before the fifth day after his exposure to the disease.

Also we may use convalescent blood for immunizing. The convalescent blood of a child who has recently recovered from measles is more potent than adult blood, who had measles at a remote time. The amount of convalescent blood is somewhat difficult to measure, in producing a mild measles. one is apt to get complete protection for the time. What one prefers to do is to produce a mild measles which produces permanent immunity and no complications. Where there are older children in the family who have had measles and the other children are susceptible, 10-20 cc of blood taken from the convalescent patient as soon as the rash disappears (which is considered the fifth day of exposure for the other children) and injected into the susceptible patient, intramuscularly, will produce mild measles. As an illustration: I was called to see a girl eight years of age who had measles. There were three younger children, 9 months, two and four years. At the disappearance of the rash of the older child, convalescent blood was given, 5-10 and 10 cc respectively. The children two and four years of age had mild measles with no complications and the nine months baby had complete protection.

Ninety-eight per cent of exposed susceptible children develop measles and the mortality is especially high in children under three years of age, especially the more delicate and weaker type.

It is well to understand that permanent or mild measles can be produced by giving adult blood 20-30 cc intramuscularly before the fifth day after exposure, also that giving blood from persons just or recently recovered from measles you can produce mild measles or complete protection. For instance, in our children's ward we had an outbreak of measles. All cases in the ward had had measles except a feeding case six weeks old and a five year old boy just recovering from a ruptured appendix and peritonitis, and incidentally had had a stormy time; certainly no time to have measles. One and five-tenths cc of convalescent serum afforded complete protection to the baby and five cc gave the boy a very mild measles with no complications.

Again an eight year old boy was referred to us from the country, who had been vomiting for several days, was markedly dehydrated, with high temperature and in a critical condition, in the prodromal stage of measles. Five cc sodium citrate plus 60 cc of convalescent blood from the older brother brought within 6-8 hours immediate relief. The temperature subsided, the vomiting ceased, the coryza, cough and Koplick's disappeared. He had a very mild atypical rash with little temperature. The result in this case was almost dramatic.

Another instance in my series, a ten months old baby who six weeks previously had had bronchopneumonia, was exposed to measles from a seven year old sister. Convalescent serum and whole blood was refused early; however, at about the third day of prodromal symptoms with the temperature ranging around 104½ to 105, rapid respiration and very restless, 5 cc of blood and 30 cc of citrated convalescent blood from the seven year old sister was given intramuscularly at 7 p. m. By midnight the father called and wanted to know if everything was all right as the temperature had dropped to normal and the respirations receded to normal. The baby developed a very mild rash with little or no tem-

CONVALESCENT BLOOD—MEASLES

Case	Severe	Mild	Complete Protection	Complications
3932		Mild		0
3946		Mild		0
3969-a		Mild		0
3969-b			Complete Protection	0
3969-c		Mild		0
3969-d		Mild		0
2658		Mild		0
2738			Complete Protection	0
5542		Mild		0
2320		Mild		0
2590		Mild		0
4863		Mild		0
3202			Complete Protection	0
5950			Complete Protection	0
3459-a		Mild		0
3459-b		Mild		0
5913			Complete Protection	0
CONVALESCENT BLOOD SERUM—MEASLES				
3098		Mild		0
6094			Complete Protection	0
573		Mild		0
50			Complete Protection	0
ADULT WHO HAD MEASLES IN CHILDHOOD				
6130			Complete Protection	0
6141			Complete Protection	0

This chart shows results in twenty cases.

perature and no complications. This shows the value of turning a severe disease into a mild one and thereby lightening the load for these kiddies In this family the seven year old sister immediately develops whooping cough. The baby develops it within the normal course of events and that is another chapter, but he makes a very satisfactory recovery. Within this one's school there were cases of scarlet fever, mumps, whooping cough and measles at the same time. To be able to lighten the load of these contagious diseases, is indirectly a life saving measure.

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DISCUSSION

R. BRUCE ELDREDGE, M. D., (Omaha): In the first place I wish to compliment Dr. Wiedman on his initiative in using this type of therapy in such a wide variety of conditions. I should like to lay a little more stress on the danger of reactions from transfusions. It has been my misfortune to have two severe reactions following the administration of blood. In one it was certainly due to an improper matching of the blood. The other was not checked up for this possibility but as they were almost indentical in character this accident seems likely in this case also. While it is true that the laboratory can almost certainly rule out such errors, unless the operator has the greatest confidence in the experience and ability of the technician it behooves him to do this most important work himself. We find ourselves thoroughly in accord with Dr. Wiedman as to the value of transfusions. In summarizing a group of about 50 cases, there were at least 12 that we could conscientiously feel owed their lives to this procedure while with at least six more the transfusions seemed to be a major factor in recovery. As to the method used there is little choice. We greatly favor the whole blood methods using the Scanell or Unger apparatus. The advantages are that this is easier, faster, less apt to give reactions and free from foreign material and early products of coagulation. Our experience with blood in contagious diseases is limited almost entirely to its use in measles. In about 25 patients treated with convalescent serum, we were successful in preventing measles entirely. In another group of about 30 where convalescent serum, convalescent whole blood, and adult serum and whole blood were used, 75% did not develop measles and of the 25% who did, there were only two who had more than a very mild case. There was not one of these patients who developed any complications. We are consequently very well pleased with the prophylactic treatment and feel that it has a much wider field of usefulness than it is enjoying at present. I wish to thank Dr. Wiedman and the committee for the opportunity of hearing and discussing this paper.

MECHANICAL CONSTIPATION*

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The types of constipation are many, and the etiologic factors which produce them are as numerous. In this brief discussion. of such a broad subject, I will take up but one type of constipation. That, I will designate mechanical constipation. Hertz divides constipation into two large classes. The first is due to the slow passage of feces through the intestine, secondary to such causes as weakness of the intestinal musculature, deficient reflex activity of the intestine, inhibition of the motor activity of the intestine, and spastic constipation or enterospasm. He also includes in this class foreign bodies and strictures.

His second class he calls dyschezia, and by dyschezia he implies that there is an inability to empty the bowel completely. Boas calls this fragmentary constipation. This type, called dyschezia, along with that due to enterospasm, is that which I wish to discuss under the term "Mechanical Constipation."

Case contributed a great deal of information, in regard to the cause of constiption, by roentgen ray studies. He demonstrated that the prevailing movement of the colon, proximal to the junction of the right and middle third of the transverse section, is antiperistalsis, which consists of a movement of waves backward toward the cecum. The physiological effect of this is to prolong the stay of the food in the cecum and ascending colon, where the digestive processes of the terminal ileum are continued. Cannon found that these antiperistaltic waves originated in a tonic constriction ring, normally found in the transverse colon, just to the right of the mid-line. From this point antiperistaltic waves travel toward the cecum. This was confirmed also by Case, by clinical observations and with x-ray. It was also noted that when for any reason obstruction occurred in the distal colon, the antiperistaltic influences, which are normally seen in the right half of the colon only, become exaggerated and extend through that portion of the colon, proximal to the obstruction. This explanation accounts for the retrograde filling of the colon, after the operation for ileo-sigmoidostomy, unless the colon has been removed, down to the point of anastomosis with the ileum. This leads one to conclude, if for any reason, the colon is hypertonic, or its content increased through obstruction in the distal colon, the origin of the antiperistaltic wave is moved distalward, so that in the severest cases, they may begin in the iliac colon. Alverez, in his study of the physiology of the bowel, has also shown that there are definite points where peristaltic waves are apt to originate from, and that there is a gradient in the bowel, which decreases from the pylorus down toward the ileum and through the colon. Correlating the findings of these investigators we may assume then, that when we have a lesion of the colon, distal to this normal constriction ring. there should develop an enlargement of the right half of the bowel, and that the stay of food residue in the right half of the colon, which is ordinarily somewhat prolonged, through the normal antiperistaltic influences, will be lengthened in direct ratio to the degree of obstruction in the distal colon. As a result, a dilated bowel is brought about, by an antiperistalsis, due to the mechanical obstruction. Case calls attention to the peristaltic unrest, with an alternating peristaltic and antiperistaltic movement, which is always present, when obstruction occurs in the distal colon. It has also been noted, that in the majority of cases of constipation, the causes, when mechanical, are usually located below the crest of the left ilium, and if not primarily due to a spastic condition, it at least exhibits spasticity as an important factor. Formerly this distention was considered to be due to an atony of the bowel muscles, but now we know, that in the majority of cases, the bowel is hypertonic, due to partial obstruction. If this distention of the right half of the bowel persists, it may give rise to an atony of the cecum and ascending colon, so that we then deal with what Schwarz calls a dyskinetic constipation. The stasis originally occurred in the pelvic colon, and being allowed to persist, gave rise to a colitis, a pericolic infection with adhesions, and spasticity. Therefore these three conditions are frequently due to some mechanical obstruction in the lower bowel.

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*Read before the annual meeting Nebraska State Medical Association, Lincoln, May 13, 1930.

Many abnormalities in the course, shape, and position of the colon occur, and constitute frequent causes of constipation, and to show that the distal colon is more often affected than the proximal, I will cite you Kantor's experiences in 668 unselected cases of gastro intestinal disease. There were 62 cases of colon redundancy, of which the signoid was abnormal 27 times, the splenic flexure 14 times, the descending colon 11 times, the ileum 9 times, and the transverse colon showed abnormalities only three times. Of these abnormalities, 43.5 per cent were in the pelvis. The abnormalities comprised redundancies, reduplications, angulations, kinking, looping, and combinations of several of these. Other mechanical lesions, which will produce this picture may be divided into two classes. First, those external to the bowel, such as, intra-abdominal tumors, benign and malignant, extra peritoneal tumors, hernias, inflammatory diseases of adjacent organs, specific peritoneal infections, such as tuberculosis and non specific generalized peritoneal infections, dermoid cysts, and bony growths which may be present and cause obstruction. Second, are those obstructions, which originate in the bowel itself, such as, invaginations, intussusceptions. polypi, and other benign tumors. Here we must include congenital strictures. Among the inflammatory lesions within the bowel, are strictures, which result most frequently from diverticulitis, tuberculosis, ulceration and gonorrheal proctitis. Malignancies in the colon, of all types, produce early spasm and later obstruction. The lesions, mentioned in this last group, are found extending from the splenic flexure down to the recto-sigmoid junction and in the rectum itself. In our usual consideration of mechanical constipation the above causes are the only ones taken into consideration. I wish here, to call to your attention, mechanical causes, that are more frequent than those above and according to my observations, are less frequently considered. They are the rectal and anal anomalies and diseases, and are such as follows: enlarged Huston's valves, rectal prolapses, hemorrhoids, acute proctitis, infected crypts, inflamed papillae, fissures, peri rectal abscesses, and fistuli in ano. If, according to Case, Cannon, and Alvarez, the antiperistaltic waves begin at the point of spasm, it is logical to conclude, that these lesions in the rectum and anus may be the point where antiperistaltic waves originate in a large number of chronic colitises and chronic constipations. If we have rectal or anal irritation, we do know, that we have an anal spasm which is brought about by a contraction of .the anal sphincter. After this irritation has gone on for a long time and the spasm has continued, the sphincter becomes hypertrophied, and as a result the muscle becomes thickened and contracted, and as a further result the anus is tight or spastic. If then the gradient of the large bowel is as Alverez says, lower as you descend down the bowel, isn't it logical to conclude that this spasm in the sphincter would be apt to set up an antiperistalsis. And if this were to be true, we would expect to find a dilated colon or a hypertonic colon in most of these cases. And what does the x-ray show in the majority of these cases with rectal or anal lesions. The reports usually read about as follows: The colon fills easily, there is no organic obstruction, but there is a marked spasticity indicative of a chronic colitis. Another report will read that the colon fills easily, is greatly dilated, and shows a marked redundancy in the sigmoid. There is an absence of haustrations which is indicative of chronic colitis. A proctoscopic examination should have been made in all of these cases, in order to have ruled out the possibility of a new growth within the rectum or the lower portion of the sigmoid.

Now, let me cite to you what usually occurs with patients who show such x-ray findings as described above. The diagnosis of a chronic constipation, due to an unknown cause is usually made, and the patient is placed upon some special type of diet, or some special cathartic regime, without any thought as to the anal or rectal condition that may be present. In the majority of these cases, the patient has been thoroughly examined from every angle with the exception of the rectal examination. If a rectal examination has been made, has a proper interpretation of the findings been made? If you ask a neurologist for his opinion on a puzzling neurological case, or if you call in an ophthalmologist for his interpretation of the findings in an eye case, and if you refer your cases to the nose and throat man to get his interpretations of his findings, you admit that there are conditions with which you are not so familiar that you wish to interpret them. Why is it that the neurologist, the internist, the general surgeon, and any other physician will think that he is capable of interpreting all anal and rectal pathology? It is a sad fact that none of us while in medical school and the majority of us since ever made any study concerning anal and rectal diseases. The average physician knows nothing about making a rectal examination. The usual examination is either an inspection or a digital examination. If an inspection is made and there are no angry protruding masses in sight, and the anus is smooth, the examiner considers the rectum normal. Or he may see some large external skin tags present, which do not bleed and are not painful, and he will tell the patient that they are of no significance. When there is a large mass of external skin tags present, you have pathology within the rectum itself. There must be some cause for these large skin tags being present. If a digital examination is made, and a mass is not found, again the rectum is considered normal; you do not seem to take into consideration that a tight sphincter is as much a sign of existing disease as a rigid abdomen or any other muscle contraction which is brought about as a protective process.

The symptoms of mechanical constipation are well defined. In the first place the patient tells you that he has difficulty in moving his bowels. His most striking statement is that he has a desire to go to stool, but upon an attempt to have a passage, the stool seems to come to a certain point within the rectum and then stops. He frequently states that he thinks he has a stricture. After a normal attempt to stool he will say that the impulse seems to disappear and there is no movement. He has had an antiperistaltic wave which has carried the stool up into the sigmoid. Another frequent finding is that the patient will empty a small portion of stool, but will still have the feeling that the bowel was not completely emptied, and he may have to resort to an enema to complete the emptying. What is the significance of these statements? It simply means, that there is an anal spasm or an obstruction. This spasm is due to some irritative process or lesion, such as, an infected crypt, inflamed papillae, an anal fissure, a peri-rectal abscess, or a fistula in ano. When it is an obstructive lesion it may be due to enlarged Huston's valves, a rectal prolapse, internal hemorrhoids or an anal or rectal stricture. If hemorrhoids are present there is a partial obstruction due to their presence because they are dragged down by a passage of stool into the anal canal thus narrowing the outlet, and after the passage give the patient a feeling of incomplete emptying. This sensation will set up a spasm of the sphincter and cause it to hypertrophy. If then, the theory, that obstructive lesions sets up an antiperistalsis, why is it not logical to conclude that anal and rectal pathology is one of the chief causes of constipation, by producing an antiperistalsis. If the anal opening is contracted and will not allow a proper emptying, how can one hope to relieve constipation without enlarging the opening. No amount of cathartic, nor any type of diet can assist one of these dilated bowels or colons in forcing a large stool through a pencil like opening. It is highly essential then, before treating any case of constipation that the anus and rectum should be examined. The treatment of this condition, of course, depends upon the type of mechanical obstruction which is present. The removal of any irritation which is producing the spasm of the sphincter should relieve the sphincter spasm. If internal hemorrhoids are present or if polypi or enlarged papillae are present, they should be removed. If abscesses or fistulae are present they should be drained. By doing this you will take away that which is producing the spasm and will also enlarge the anal outlet. If a case of this type is operated, and the anal opening is not more relaxed and is not larger than it was previous to the operation, you cannot consider that the operation has been a success; so removal of hemorrhoids by clamp and cautery and by any of the methods which do not relax the spasm is not good practice and should be discouraged.

CONCLUSION

A great many constipations are produced by mechanical obstruction of some type, and in the anus and rectum we do find a great many lesions which produce muscle spasm and a mechanical obstruction. Unless the anus and rectum are properly examined and treated in the care of the case of constipation, one cannot hope to obtain the best results.

DISCUSSION:

F. B. YOUNG, M. D. (Gering): I want to say I appreciate this paper very much. There were some mighty good points in it. We practitioners get tired being preached to. I think most of us know how to make a rectal examination. I have been in practice thirty years. Maybe twenty years ago, such insinuations as Dr. Moon cast might have been in place. They are not today. I do not think the medical profession is in the habit of neglecting the examination of so important an organ as the rectum. We would appreciate such talks were the beratement of the general practitioner and the sermonizing left out.

DR. MOON (closing): I am glad to know the general practitioners are examining the cases as thoroughly as they are. Rarely do we see a case that has been thoroughly examined. What I plead for is that more of you put the patients on the side and look at them, rather than to let them go to Kansas City or Excelsior Springs. They go and you can not. If you will examine them as Dr. Young says the practitioners do, we would more and more have this type of case.

THE PROBLEM OF DRAINING THE PERITONEAL CAVITY

H. C. MILLER, A. B., M. D., F. A. C. S.,
Omaha, Nebr.

Since the work of the Master Surgeon, Lister, based upon the works of Pasteur, made possible operations upon the viscera of the abdominal cavity, the moot question, "To drain, or not to drain", has caused more heated discussion than any other one phase of surgery.

Previous to the experimental work of Poynter(1), the process of peritoneal absorption was not clearly understood, and the opinions of surgeons have been necessarily based empirically upon the recovery, or failure to recover, of patients undergoing certain operations. Too often, other vital contributing factors were not considered, and the death of the patient was attributed solely to non-drainage, or improperly applied drainage.

Abdominal drainage began with abdominal surgery, and at first was used in all operations to overcome the ever present infections that seemed to be a natural result of operations. Later the better understanding of the physiology of the abdominal viscera, the development of asepsis and the improvement of technique limited somewhat its indications and use. Cautiously at first, then more boldly, the surgeons began closing without drain in cases where no infection was apparent.

The first surgeon to have the temerity to suggest that complete closure could be used following the removal of a gangrenous appendix was Mikulicz(2), 1884. Unfortunately, his patient failed to survive. Brockman(3) states that from that time on, surgery entered into an era lasting until the present time, which was, and is dominated by an obsession that a peritoneal exudate of purulent appearance is of necessity pus, demanding drainage.

The work of Yates(4), 1905, showed the impossibility of draining the peritoneal cavity as a whole. In 1912 Andrews(5) reported a series of cases and contended that general closure in acute cases should be the rule, a contention not well received by his confreres. In 1920 Ombredanne(6) wrote a paper advocating closure without drainage in all acute cases, regardless of the lesions which were found at operation. This aroused a great deal of hostile criticism at that time, but it is interesting to note how widely this opinion has since been accepted.

The dictum of Lawson Tate, "When in doubt, drain", has been modified to, "When in doubt do not drain", by most surgeons of today. However, opinions still vary, and drainage is used not at all by some; in selected cases by many, and extensively by others. An example of the latter is the Cofferdam drain of Joseph Price, as advocated by Kennedy(7).

The recent outstanding work by C. W. M. Poynter(8) gives our first real knowledge of the process and rapidity of peritoneal absorption. The peritoneal cavity has been considered as a huge lymph space, and the peritoneum as capable of pouring out and re-absorbing large quantities of serous fluids and leucocytes. Poynter's(9) work shows conclusively that the undamaged peritoneum generally does not absorb—that absorption through the peritoneum takes place only through the limited area that covers the diaphragm, and that the only other pathway of absorption is through the great omentum, which is not covered with peritoneum. He shows that true solutions, toxins, bacteria, and particulate matter, are taken up with equal facility through these two channels, and only through these channels. Quoting directly:

"To the person who has to do with acute peritonitis it is somewhat more convincing to use bacteria instead of dyes although the behavior is exactly the same. A number of experiments with *B. typhi minium* showed that the absorption of bacteria is by the two routes described above and is equally rapid. Within eight minutes from the intraperitoneal injection of broth cultures bacteria can be grown from the blood of the tail.

"There has always been a question as to the absorption from the acutely inflamed peritoneum; in order to answer this we repeatedly induced peritonitis and, at various intervals in the process, examined its reaction to absorption. We found that the paths were the same, and the absorption rate did not materially differ from the rate for the normal membrane. Absorption is slightly freer in early severe infection and is definitely less in old fibrinous processes; it is possible that the interference with circulation of fluids within the cavity in the latter case is responsible for the difference. As to the fate of the bacteria in these experiments: after two or three days they disappear from the blood stream and a very little later the peritoneal content is also sterile even when the gross appearance is still one of acute peritonitis.

"We have carried this work over to clinical cases, carefully checking cases of acute peritonitis in the University hospital both for blood cultures and peritoneal cultures, and find they agree with our experimental procedure. We may conclude that absorption has contaminated the general circulation long before any operative procedure can be instituted and that the process can be little if at all influenced by so-called surgical drainage".

The evacuation of the whole of a septic fluid from the peritoneal cavity, even with multiple incisions and drains is an impossibility. Only limited zones may be drained. The almost immediate reaction of the abdominal viscera to the presence of a drain—be it rubber tube or tissue, gauze or glass—is to occlude this body from the rest of the peritoneal cavity. A drained abdominal cavity opened after twenty-four hours, shows the intestinal loops and omentum widely agglutinated around the drain. Consequently the area drained is equal only to that of the surface area of the drain itself.

Experimentally it has been shown that complete isolation of the drain takes place within four to twelve hours. The agglutination—adhesion—of the intestines and omentum are productive of more immediate post-operative discomfort and to more subsequent pathology requiring secondary operations than all other conditions together. In the so-called parlytic ileus, causing death following operation with drainage, a careful post-mortem examination will show, in the great majority of the cases, an occlusion of the intestines by agglutination at the point of drainage.

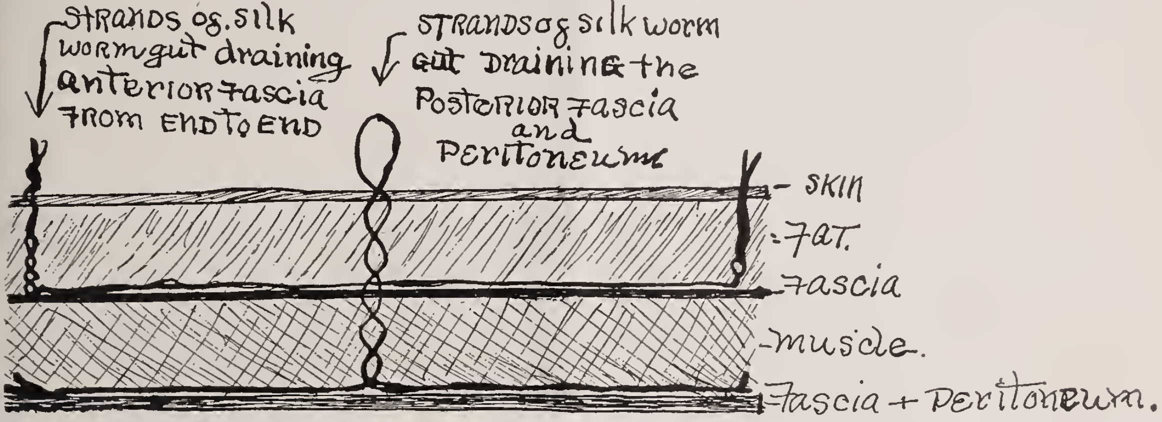
Krecke(10) says that careful over-suturing of all peritoneal defects, is of first importance; that the agglutination of sutured, serous surfaces is accelerated when the lymph stream of the abdominal cavity laves the sutured line. He states that the touching of the suture line by any foreign body, glass, rubber or gauze, delays or prevents this agglutination so that a suture insufficiency with its dangerous sequence may appear.

In the not far distant past, it was quite customary for the surgeon who drained all abdominal cases, to display the copious outpouring of purulent fluid from a drained, aseptic wound, and declare that drainage had saved that patient from peritonitis and death, not realizing that the outpouring fluid represented only an attempt on the part of the abdomen to expel an irritating foreign body.

Published records of others, data given me by various associates, and my personal experience leads to the conclusion that abdominal drainage is permissible only in a very limited number of conditions.

Examples:

1. In the isolated abscess (pus pocket) already occluded from the rest of the peritoneal cavity by the adherent intestine and omentum.
2. When a hollow viscus shows a condition predisposing to a necrosis of its wall and when the condition of the patient or of the tissues themselves, does not permit of re-section of this suspected area, a drain leading to the surface will cause a walled off canal to be formed. This drainage to the surface will protect against a general peritoneal involvement, if necrosis occurs.
3. From the point of imperfect hemostasis especially if it be arterial. If hemorrhage is feared, a small soft rubber drain from the suspected point will give warning of hemorrhage before the patient becomes exsanguinated and is still operable. Nothing but the most pliable rubber tissue should be used as drainage material. Tubes of glass or rubber are prone to cause pressure necrosis of hollow organs with a resultant fecal fistula.


Strands og. silk wormgut draining anterior fascia from end to end
Strands og silk worm gut draining the posterior fascia and peritoneum
- skin
- fat.
fascia
-muscle.
fascia + peritoneum.

Drainage from an infected focus contaminating the abdominal wall often results in infection of the facia, early absorption of sutures, non-union of facia, and subsequently, post-operative hernia. Upon the integrity of the facia, depends the integrity of the abdominal wall.

The possibility—even probability of the contamination of the abdominal wound when an infected focus has been entered, makes advisable the drainage of the facial planes. Such drainage is especially urgent if complete hemostasis is not obtainable. A collection of blood serum and disintegrated cells offer an admirable culture media for pathognomonic bacteria.

Silk worm gut is excellent for such drainage. As shown in the diagram below, each plane can be effectively drained with it. It offers the additional advantage of being painlessly removable, and there is no gaping of the wound after removal.

The use of a layer of vaseline—saturated gauze over the wound will prevent the coagulation of exuding serum, and keep patent the drainage openings.

Note—These drains are allowed to remain 72 hours.

For the purpose of comparison and evaluation I have assembled data on a series of cases, including all types of operations in which the abdominal cavity was entered. In selecting these cases, I have endeavored insofar as records will permit, to take a number of parallel cases, and divide them into categories of drained and undrained. I have not included in this series any herniae, malignancies or any drained cases which were concededly poor risks at the time of operation.

Total number of operations 280	Average number of days in hospital	Mortality	Average number of days of disability until able to resume usual activities	Post-operative Herniae	Number of post-operative wound infections	Number requiring subsequent operations for adhesions, etc. Not herniae	Number having marked discomfort during the first four post-op. days
Drained 138	21.2	2 { 1-Paralytic Ileus 1-Gen Peritonitis	63.4	3	18	3	38
Undrained 142	10.5	1-Pulmonary Embolism	37.2	0	2	1	12

This, of course, is not an exhaustive analysis, but it indicates that drainage does increase.

1. Post-operative discomfort.
2. The number of days in the hospital.
3. The number of days of disability.
4. The number of post-operative infections.
5. The number of required secondary operations.

General drainage does not decrease mortality.

When indicated, as in localized abscess, impending necrosis of a wall of hollow organ, or imperfect hemostasis, drainage is a justifiable, commendable procedure. Lacking these indications, drainage is a dangerous and useless irritation of extremely sensitive tissues.

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TETANUS: REPORT OF A CASE SUCCESSFULLY TREATED WITH ANTITOXIN

Presented at the Lord Lister Hospital Weekly Clinic.

E. C. HENRY, M. D., AND C. A. HEISE, M. D.,
Omaha, Nebr.

PRESENTATION

The patient is a women of 43 years, the wife of a farmer in western Iowa. April the first, 1930, she ran a wooden splinter into the fleshy part of the foot at the proximal part of the left big toe. Part of the splinter broke off and remained in the flesh. Four days later the patient pulled out the remainder of the splinter which was one-half inch long and showed a small amount of pus in the wound. Patient cleaned the wound with alcohol and applied mercurochrome. Six days after the injury, the patient complained of aching in the throat and jaws which progressively increased and was followed the next day by rigidity and extreme pain of the neck. Dr. Heise was called, made a diagnosis of tetanus and immediately removed the patient to the hospital.

Examination on admission revealed an open punctured wound at the base of the left toe, marked and painful rigidity of the neck, soreness of the jaws, trismus and dysphagia. Temperature 100 (rectal), pulse 98, and respiration 20. Prior to coming to the hospital, the patient had broken a thermometer between her teeth during a convulsion when an attempt was made to take the temperature by mouth. Urinalysis showed a trace of albumin with a moderate number of pus cells and a few red blood cells. The blood count showed a leukocyte count of 10,800 with 86% polymorphonuclears, 12% small and 4% large lymphocytes.

The wound at the toe was widely excised under local anesthesia and a culture taken in brain-bouillon. This culture subsequently showed typical clostridiae. 1,500 units of tetanus antitoxin was injected around the wound, 10,000 units intravenously and 5,000 units intrathecally. The spinal fluid drained off was clear and showed a cell count of 2 pr. cmm. One-third gram of pantapon was given prior to operation and subsequently given p. r. n. during the next five days, together with chloral hydrate per rectum. Heat was applied to the body and Ringer's solution with glucose given per rectum. Next day, April 10th. 10 cc of 20% magnesium sulphate was given intravenously. Temperature 102.4.

April 11th—20,000 units tentanus antitoxin intravenously. Temperature 104.

April 12th—10,000 units intrathecal, 20,000 units intravenously. Total of 66,500 units.

Neck pain and rigidity lessened. Jaws opened three-fourths inch. April 18th, Urinary incontinence and apparent cerebral oedema. April 20th, therapeutic spinal puncture made. 25 cc of clear fluid withdrawn. This fluid was under increased pressure and showed a cell count of 10 pr. cm. The Wassermann test was negative. April 22nd, voided. Talked rationally.

Temperature from this time on showed a steady drop and the movements of the jaws and neck steadily increased. Patient was dismissed from the hospital May 3rd, feeling well, reflexes were normal, and there was no paralysis. A slight hesitation in speech was present.

DISCUSSION

DR. A. S. PINTO: The case presented illustrates well the point I have always made in this disease as well as in diphtheria where we have specific antitoxins, that is, give massive doses and give them early. In tetanus, the intraspinal route is to be preferred and the next best is the intravenous. Later on, say about the 4th, 5th and 6th days, subcutaneous or intramuscular injections may be employed in 5,000 unit doses.

DR. F. J. WEARNE: It is well for all of us to see this case because it does bring home to us the necessity of not forgetting to give the prophylactic dose of tetanus antitoxin to every patient presenting a penetrating wound or deep abrasion, particularly, of course, when soil contamination is present.

DR. F. O. BECK: While treating stock-yard employees, for all kinds of injuries, over a period of twenty years, I have been fortunate not to have a single case of tetanus develop, and during the major part of that time no prophylactic antitoxin was administered. I would like to know the legal status of this question.

DR. ERNEST KELLEY: From the neurologist's standpoint, the handling of this case, aside from the specific antitoxin, has been well taken care of. The most urgent symptom to be met is the convulsion. Chloral and bromides in large doses will lessen the severity of the tonic contractions and will lessen the irritability of the centers. To actually quell the convulsions, morphine in one-fourth or one-third grain doses is efficient or chloroform by inhalation during the acute exacerbations of spasms. Amytal given intravenously may be of value.

It is well to remember the exquisite sensitiveness of the sensory-motor apparatus in this condition and guard the patient against unnecessary noises.

DR. E. C. HENRY: Dr. Pinto is no doubt right in advocating the intraspinal injection of the antitoxin, particularly in the early stages. When tetanus antitoxin first came into use, the French physicians injected it intra-cerebrally and I have myself so used it in two cases.

The legal status in regard to the use of tetanus antitoxin, according to my understanding, is that the administration of the antitoxin is not required by law, but if the case became a medico-legal one, the doctor who does not or has not complied with medical practices as accepted in the community lays himself open to an accusation of neglect.

SUMMARY

A penetrating wood-splinter in the foot with a partially closed wound and incubation period of eight days followed by the outstanding symptoms of trismus and rigidity of the neck muscles, irritability, localized tonic and clonic spasms. The treatment consisted in thorough excision and drainage of the wound with 1,500 units of tetanus antitoxin injected locally, 15,000 units intrathecal and 40,000 units intravenous, chloral hydrate and pantapon when indicated. The patient left the hospital completely recovered after a period of twenty-five days.

CONCLUSIONS

1. Prophylactic doses of antitoxin should be given in every case of penetrating wound, particularly with soil contamination.

2. On development of symptoms, large doses of antitoxin should be given.

3. Intrathecal administration is preferable early in the attack. Intravenous and intramuscular is effective later.

4. Opiates should be given freely to control nerve irritability.

THE SANITATION OF SWIMMING POOLS

The protection of swimming pools, according to the United States Public Health Service, of both the indoor and outdoor type, against contamination by bathers involves the use of certain methods applicable to all bathing places where the amount of water is limited—first, control of the bather; second, replacement and disinfection of the water.

To reduce the amount of contamination from bathers, regulations should require that individuals using the pool cleanse themselves as thoroughly as possible with soap and water before entering the bathing place. As a further precaution, every bather should be given a physical inspection, and no person who has any contagious disease or infected sore or wound should be permitted to use the pool. It is believed that infections of the ear and eye occurring among bathers frequently are acquired in swimming pools; yet it is possible that if these infections are attributable to the use of bathing places, some of them may result from the effect of water pressure or the lessening of bodily resistance by exposure to cold and physical exhaustion, or from the spread of infection already present in the individual himself. Transfer of infection from one bather to another may also take place. Infection of the feet with ringworm is believed especially likely to spread among bathers, presumably as the result of depositing the causative organism on the floors of bath houses. The danger of acquiring this annoying infection should be minimized by keeping the bath house floors as clean and dry as possible. The use of light canvas slippers in dressing rooms would probably result in marked decrease in the frequency of ringworm of the feet. Carpets or rugs should not be used in bath houses as they are likely to remain damp and harbor infection easily. Foot tubs such as are frequently provided at hotels and bath houses are likely to spread infection and should not be allowed.

To minimize the danger of contamination of swimming pools and small ponds by bathers certain standards for replacement and disinfection of water have been fixed by sanitary authorities. Assuming that the water is pure when it enters the pool, the amount of fresh water required for each bather, without regard to disinfection requirements, is fifty gallons. In other words, where the pool is filled and emptied at intervals it may be used, after each filling, by one bather for each fifty gallons of water in the pool. If the water is replaced by continuous flow or recirculation, there must be a replacement of fifty gallons for each bather.—*United States Public Health Service.*

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A GLIMPSE AT THE WORK OF THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION

The information herewith is gathered from the *A. M. A. Bulletin*: The secretary reported the enrolled membership to be 99,181. The number Fellows is 65,419. The circulation of *Hygeia* now exceeds 75,000 and it is on a self sustaining basis.

A large part of the secretary's report was devoted to a discussion of the need of the development of a more militant spirit in county medical societies and in state medical associations to the end that each of these units of medical organization, in its sphere, will become more efficient in advancing the science of medicine, in improving the means and methods of its application, in bettering the public health and in persistently opposing anything and everything that would reduce the medical profession to the status of a trade or of a socialized group of hirelings.

The President discussed the work and the purposes of the Committee on the Costs of Medical Care and gave specific information concerning certain principles adopted by that committee at its last meeting, which are as follows:

1. The personal relation between physician and patient must be preserved in any effective system of medical service.

2. The concept of medical service of the community should include a systematic and intensive use of preventive measures in private practice and effect support of preventive measures in public health work.

3. The medical service of a community should include the necessary facilities for adequate diagnosis and treatment.

An important recommendation offered by the president was that the House of Delegates should authorize and request the Board of Trustees to establish a Bureau of Medical Economics whose functions shall be to study all economic matters affecting the medical profession. Such a Bureau was accordingly created.

A considerable portion of the address of the president-elect was given over to a discussion of the relations of government to hospital maintenance and of the relation of the physician to the hospital. In concluding this part of his address, Dr. Morgan laid down the following principles:

1. The physician is no more obligated to provide for the care of the indigent sick than his fellow citizen.

2. In mutual charitable undertakings for the care of the sick, each citizen contributes what he has; the laymen, physical necessities; the physician, professional skill. But each has a right to protect himself from exploitation and to judge of the merit of the recipients of his bounty.

3. When a hospital offers its facilities to a mixed clientele, pay, part pay and pauper, the distinction between the sources of those facilities should be clearly recognized. The physical equipment and service is of general public origin, and their uses may be sold or given away in the discretion of lay boards; but the professional facilities are, and always must be, the contribution of the medical staff as individuals and cannot become in any sense the property of the institution.

4. When a hospital is owned and operated by the government and supported by taxation, to which the medical profession contributes its due proportion, medical attendance should be paid for by taxation, along with all the other facilities supplied by the institution.

5. No hospital, instituted and supported by public philanthropy or community cooperation of any kind, should be permitted to increase its revenues and so reduce its financial burden on the public, by any system of collecting fees for medical attendance, and thus engaging in the corporate practice of medicine.

6. The membership of the Association should be guided by these principles in accepting posts on the staff of hospitals, and should refuse to support by the contribution of their services, or by the references of their patients, any institution violating them.

Apparently many members do not have any genuine appreciation of the scope of the work of the association. Many seem to be unaware that any activities are engaged in except those necessary for the production of *The Journal*. Others appear to believe that the association is concerned only with the publication of its various periodicals.

It was brought out in the report of the Board of Trustees that expenditures of the Councils, Bureaus and other departments of the association were in excess of $280,000 in 1929, this having been in addition to miscellaneous charges due to costs of publication of the special journals and of the directory, to incidental expenses involved in the conduct of the association's business and, of course, in addition to the expense arising from the publication of *The Journal.*

The Board of Trustees urged that members and Fellows of the association take advantage of avenues open to them for securing information concerning the work of the association and that all members of the House of Delegates make comprehensive reports of the proceedings of that body at the annual sessions of the constituent associations they represent.

With regard to the practice of medicine by corporations, the Council voiced its opinion, based on present evidence. that such practice is detrimental to the best interests of scientific medicine and of the people themselves. "When medical service is made impersonal, when the humanities of medicine are removed, when the coldness and automaticity of the machine are substituted for the humane interest inherent in individual service and the professional and scientific independence of the individual physician, the greatest incentive to scientific improvement will be destroyed and the public will be poorly served."

The adoption of the continuous method of medical instruction whereby a student can complete the required four years of college education of eight or nine months each in three calendar years is being attempted in eight medical schools. Statistics heretofore presented by the Council have shown the average age of students graduating to be 26½ years—or 27½ years counting the internship—and the Council expressed the opinion that any method that can reduce this maximum age would be a move in the right direction.

The House of Delegates passed the following resolution:

> Resolved, That legislation recently enacted providing for the enlargement of the hospital facilities at the command of the Veterans' Bureau for the care of veterans, rich and poor, who desire hospitalization and treatment for diseases and injuries that admittedly have no relation whatever to military service is unsound and communistic in character, and the pending proposal to allow such veterans as are of financially limited means bonuses and money to add to their own comforts while they are in the hospital and to help support their families during that period and for limited periods thereafter is calculated to induce patients to seek hospital care through the Veterans' Bureau when such patients should be better and more economically treated as ambulant patients or treated in their own homes;
>
> Resolved, That the duty of providing medical and hospital care and financial relief for indigent citizens of any state, when disabled by diseases and injuries that did not originate in the line of military duty, is a function not of the federal government, but of the governments of the several states and should be discharged through state agencies, including permanently established state, county, municipal and private hospitals; and
>
> Resolved, Further, that a copy of these resolutions be sent to the President of the United States.

The following resolutions were adopted:

> Resolved, That the Section on Nervous and Mental Diseases hereby declares its adherence to the principles stated in the Report of the Committee on Psychiatric Jurisprudence, Section on Criminal Law and Criminology, American Bar Association, and approved by that association at its meeting held in Memphis, Tenn., Oct. 24, 1929, namely:
>
> "1. That there be available to every criminal and juvenile court a psychiatric service to assist the court in the disposition of offenders.
>
> "2. That no criminal be sentenced for any felony in any case in which the judge has any discretion as to the sentence until there be filed as a part of the record a psychiatric report.
>
> "3. That there be a psychiatric service available to every penal and correctional institution.
>
> "4. That there be a psychiatric report on every prisoner convicted of a felony before he is released.
>
> "5. That there be established in each state a complete system of administrative transfer and parole, and that there be no decision for or against any parole or any transfer from one institution to another, without a psychiatric report."
>
> Resolved, Further, that the section recommends that the House of Delegates of the American Medical Association adopt the principles stated above and request the Board of Trustees to take such action as may be necessary to bring about the cooperation of state and county medical associations with corresponding state and local bar associations in securing as far as possible, the adoption of these principles in practice.

In 1929 the Library supplied nearly 2,000 library packages, on request of members, approximately 5,000 periodicals were loaned and 3,000 reference questions were answered.

The Board of Trustees reported to the House of Delegates that it is successfully proceeding with its plans for providing new and enlarged housing facilities in Chicago. At the time the report was submitted, negotiations were proceeding for the purchase of the property needed in addition to that which has already been secured.

HEALTH EXHIBIT AT THE STATE FAIR

The Health Exhibit at the State Fair, under the direction of the public activities committee of the Nebraska State Medical Association—the first to be inaugurated in any state—has in the four years of its existence developed into an institution of magnitude the importance of which, to the welfare of the state, cannot well be measured.

A large two-story building with two outlying wings and an annex are devoted to the exhibit. The State Fair Board foresaw the importance and possibilities of this work several years ago and set apart these buildings for the purpose of an annual health exhibit to be put on under the direction of the Nebraska State Medical Association.

The several divisions of the work are carried on under the following heads: Tuberculosis exhibit; illustrated lectures; separate departments for health examinations of adults, children and infants; the passing out of literature, and in addition, the emergency hospital and nursery are under the supervision of this department. The Women's Auxiliary has a desk featuring the magazine *Hygeia*.

The tuberculosis exhibit is made by the Nebraska Tuberculosis association cooperating with the public activities committee of the Nebraska State Medical Association and consists of morbid specimens, charts, illustrative of tuberculous conditions, etc. Persons wishing it are weighed and if underweight points to possible disease, they are referred to the health examination department.

Several registration desks line up the several classes of persons to be examined and direct the order of examination. About two dozen booths are devoted to the examinations, each equipped with a palette covered table and other needed accessories. About a hundred physicians from over the state take part in the examinations, each scheduled for a particular period. A surprising number of unsuspected physical defects are discovered. When defects are discovered the person is referred to his family physician for attention.

A theatre accommodating several hundred persons is provided. Here lectures and moving pictures pertaining to health are given continuously during the day.

Literature is passed out. Two leaflets were particularly featured this year: "Prenatal Care" and "De We Keep Faith With Our Children?" At the Emergency hospital, as its name implies, all emergency cases applying are cared for. The Nursery cares for babies, free of charge for 2-hour periods and relieves the mothers for that period. That this is appreciated is attested by the fact that in one day the nursery cared for 46 babies. Twenty cribs are provided, the large room is kept quiet and with subdued light and the babes are under the supervision of trained nurses.

The functioning of the Health Exhibit must be visited to be fully appreciated. The work here carried on has attracted the attention of the American Medical Association. Last November Dr. E. R. Hays, chairman of the public activities committee by request, presented the outline of the work before the Annual Conference of Secretaries and Editors of Constituent State Associations at the A. M. A. headquarters in Chicago.

The Health Exhibit this year was favored by a visit of inspection by Dr. John M. Dodson, Director, Bureau of Health and Public Instruction of the American Medical Association. He was much impressed by the work as carried on and it is likely that under the name of the "Nebraska Plan" the work will be carried to other states.

It is too much to expect that perfection has been attained in this work, but changes are made as the need for them develops, and the work of the public activities committee as it now stands is the most outstanding work of the Nebraska State Medical Association for many years. All honor to Dr. E. R. Hays and his fellows of the public activities committee.

It has become apparent that if this work is to be continued and further developed some way must be devised to provide means to employ a full time head. No man can give the best there is in him to the public good to the neglect of his own business without full compensation.

DO PERIODIC HEALTH EXAMINATIONS PAY?

At a recent Health Education Program by the Nebraska State Medical Association where periodic health examinations were given, an official of the lay organization which was financing the project, requested a physical examination that he might better report to the Board of Directors his personal views on the program.

This official stated in his history that he considered himself in good health.

Upon examination the following defects were found: Acne rosacea, left inguinal hernia, flat feet, ingrowing toe nails, active gingivitis (pyorrhea), two molars missing, maxillary sinuses infected, considerable post nasal discharge, extensive external hemorrhoids, melanotic mode on right nipple undergoing changes, probably a beginning epithelioma (cancer).

—E. R. Hays, Chairman,
Public Activities Committee.

THE CHILD HEALTH CONFERENCE AND BABY CLINIC

In a general way our profession has been somewhat backward in taking the initiative in health maintenance and disease prevention. We have rather waited for public demand. Possibly this is as it should be. However, at present we are confronted with a situation in which there is a definite public desire for information in matters of health, and unless we avail ourselves of the opportunity thus presented we will fail in our duty as physicians.

In taking hold of child health work we must in some measure change our thoughts with respect to each individual child we examine. We must learn to think of what is normal for this or that child rather than to think of disease. Our preparation both in school and practice has been to endeavor to treat illness; now we must prepare ourselves to keep the healthy from becoming ill. This opens a much wider and more desirable outlook for medical practice. Nebraska, at the present time, is entering upon a definite state-wide health program, brought about through the efforts of Dr. E. R. Hays, with the hearty cooperation of Drs. Welsh, Heagey, and numerous others, equally helpful. This program includes child health, adult health, and education for proper prenatal care.

A distinct advance is now available for helpful education, both of physicians and laymen, at our State Fair. Our own Nebraska State Medical Association now has charge of the health education at each State Fair. Active support of this work should be our contribution toward better adults, better babies, and better mothers.

Criticism of Baby Health Conferences has not been lacking. Most of this has been because of inadequate remuneration. Newspapers and magazines recently have contained a great many articles dealing with periodic health examinations. Proper remuneration will undoubtedly be forthcoming. This has been the experience in other communities, notably Minneapolis.

At the State Fair just past, examinations were given carefully by different general practitioners. The importance of the family physician was emphasized and the specialist was consulted only at such times as seemed necessary by the examining doctor. An attempt was made to conduct the examinations in the same manner as though given in his own office. In this way criticism of wholesale examinations was refuted.

In the children's department a new chart was perfected, and the former system of scoring was done away with. A rating which is much more flexible was substituted. The importance of immunization and prevention was stressed.

At this time it is extremely difficult to endeavor to foresee what will be accomplished as the result of health conferences. Suffice it is to say that the demand for them is upon us and that we, instead of the lay public, should take the initiative in their proper conduction. Whether the public will appreciate the effort expended is doubtful and should not be considered.

So let us all willingly cooperate, endeavoring to give the best that is in us for the benefit of humanity, that they may live longer and be less susceptible to disease.

—Floyd Clarke, M. D., Omaha.

THE BRITISH MEDICAL ASSOCIATION MEETING AT WINNIPEG

On August the 29th, the eighty-ninth annual meeting of the British Medical Association held in Winnipeg was closed, and it marks the third time in almost a hundred years of its history that this association has been brought to Canada. Thirty-two years ago they visited Montreal, and in 1906, Toronto, and their coming to Winnipeg is a mark of unusual recognition for northwest medicine.

This meeting opened on August 26th and those of the United States who attended the various sessions could but be impressed by the beautiful city of Winnipeg, the colorful, elaborate and pompous ceremonies, parades and hospital social features that were offered in connection with this convention.

The headquarters of the meeting were placed in the new Winnipeg Winter Club which has a spacious auditorium, splendid room for exhibits of commercial and scientific nature, with parlors, beautiful corridors, rest rooms, swimming pool, and other things that adds to the diversity of entertainment for the members and their guests. The scientific sessions were held at various buildings in close proximity to the Winter Club.

The opening morning in the Winter Club auditorium the president-elect of the British Medical Association, Professor W. Harvey Smith, made the opening address. He is also president of the Canadian Medical Association and a citizen of Winnipeg, connected with the University of Manitoba.

The platform from which he spoke was covered with banners of every State in the British Empire, the dominating red sparkling ornaments as well as the gold and silver braids of these banners, made an impressive background for the many colored robes of those who sat upon the platform. At these particular functions, such as the opening general session, a great number of the doctors wore their academic gowns.

Following Professor Smith, the Prime Minister of Manitoba, John Burkett, gave an official welcome. Then the beautiful flag of Winnipeg was presented to the association. After this there were introductions, presentation of prizes and the Presidential address. The flag presentation impressed me with a great deal of interest. In the great hall of the British Medical Association at Travestock Square in London the banners of the various cities in which the association has met are hung, and every city so fortunate as to have its flag hanging within these corridors feels particularly honored.

In the center of the flag is the Coat of Arms of the City in their proper colors. In the upper left hand corner the white scroll showing the date of the meeting and then below, the name "Winnipeg".

On the afternoon of August 26th the official religious service was held at the Legislative Building. Over the beautiful grounds the various organizations—the Red Cross, Boy Scouts, Nursing Association, etc., took part in regulating and policing the area in which the festivity was to occur.

After the band came a Sea Scout Guard of Honor followed by the maze of the British Medical Association and flags. Behind them came the two most distinguished and colorful members of the association, Lord Dawson of Penn and Lord Moynihan, adorned in all their gowns and regalia of ribbons, medals, significant of degrees and honors. These made them stand out far beyond any of the hundreds of others that followed in their various robes and regalia. There were also all types of uniforms and academic gowns of every color, perhaps a mile or more of procession of this character.

As we gathered on the steps of the Legislative Building a profoundly impressive religious service followed, led by the Archbishop of Winnipeg, who, with his robes and long flowing gray beard, would rival Moses in all his glory.

Another ceremony of an interesting character held at Tuxedo Park where the Cree Indian tribe adopted Lord Dawson of Penn and made him Chief of their tribe, giving him the name of "The Head Medicine Man to Their High Chief", decorating him over his gown, ribbons and medals, with a full Indian head-dress of eagle feathers and lovely beaded ornaments.

At this event we came in contact with the Royal Northwest Mounted Police who were the guard of Honor and formed a spectacle themselves with their red coats, blue well fitting riding pants, shining boots, brass buttons, and campaign hats. In contrast were the many colored and sparklingly ornamented attire of the Indian tribe.

The medical program is quite different from that of the American Medical Association in that the sessions of the scientific sections last only from ten a. m. to noon, although some of the scientific sections have afternoon clinics. A great deal of space is given on the program to various social events, sporting events, etc. There were several golf competitions of medical national importance; there were teas in the afternoons, exhibits, rides about the city, and LaCross matches. On the evening of Wednesday, the 27th, at the Amphitheatre rink, we witnessed a most interesting ice carnival—something totally different than we are accustomed to in this country. And on this same evening of August 27th, I had the pleasure of attending the Alumnae Banquet of the University of Manitoba Medical College, which by the way, started about eleven o'clock and ended in the wee hours of the morning.

I was impressed by the sincere hospitality of these Canadians and in their effort to do everything possible for your comfort and for your pleasure. They were inclined to be slightly critical of our government and its tariff measures but after all they would say "We are all Americans and we have got to remain brothers no matter what our governments do".

The president of the medical section was Lord Dawson and the president of the surgical section was Lord Moynihan. My interest in the proceedings of the orthopedic section allowed me no opportunity to hear these celebrated gentlemen take part in their respective sections.

The sectional meetings of the various specialties devoted an entire session almost exclusively to the discussion of one or kindred subjects. To illustrate, in the orthopedic section, the first morning was devoted to Congenital Dislocation of the Hip and led by Dr. H. P. H. Galloway of Winnipeg, who favors open operation, reduction of the hip at all ages. He was followed by M. E. Laming Evans (London) and T. Hartley Martin (Liverpool) who favored the closed method. Others followed with varied opinions pro and con. Likewise, the second morning's session was taken up with the subject of fractures about the knee joints, including two very interesting papers by A. Gibson (Winnipeg) on Semilunar Cartilages, and Fractures of the Patella by Mr. R. Wilson Jones (Liverpool).

These discussions resemble much our symposiums except that they are less formal and show great preparation, are to the point, rendered with rhetorical perfection and excellent choice of words.

The Hobbies Exhibit impressed me more than all the other exhibits. Apparently much interest and pleasure is derived in the British Isles and Canada in the preparation of examples of recreational hobbies of medical men. There were lovely paintings in oil and water colors, etchings, sculpture and modeling, woodwork, photography, musical manuscripts, stamp collection, coin collections, curios, horticultural and natural history exhibits; each one a work of art showing brilliant effort.

This exhibit is typical of the medical men of the British Empire. They enjoy play and relaxation, whether it is physical or mental. They endeavor to use their hobbies in an intelligent manner often attaining a remarkable degree of perfection, thereby furnishing a diversion of great value to their well being. Likewise, the fostering of such exhibits furnishes an inspiration for accomplishment to all that see them. Perhaps it offers us a lesson that might prove of value to our membership.

—J. E. M. Thomson, Lincoln.

PROGRESS IN ANAESTHESIA

Substitutes for anaesthesia go back to remote antiquity.

"A deep sleep was caused to fall upon Adam" in order that the creation of the human species might be consummated. For Talmudic surgery "samme de shinta" was employed. About the time of Christ, the Greeks used mandragora wine as a clyster or as an inhalation for anaesthesia in surgical operations. Its use continued through the Middle Ages and in the absence of true anaesthetics, soporifics were employed. Shakespeare speaks of "drowsy syrups" though Ambrose Pare, a contemporary and a most compassionate man, never used them in his surgical practice.

Early in the 19th century, surgeons intoxicated their patients with alcohol and opium before beginning operations. But none of these agents gave the muscular relaxation necessary for the reduction of fractures and dislocations, a large part of the surgery of the time, and Sir Astley Cooper ingenuously added emetics and bleeding to secure the desired effect. It is said that Dupuytren induced faint by unexpected verbal brutality and operated under this more or less vicarious anaesthesia.

In 1846, with the introduction of ether by Morton, came a safe and very superior anaesthesia. Even now, 85 years later, it remains the most generally used, the safest, and the most reliable means of securing surgical anaesthesia. With the birth of ether anaesthesia, came the death of pain in surgery. Yet, because of the dread of its irritating vapor, its nauseating odor, the post anaesthetic headache and vomiting, many necessary and in some cases urgent operations were fatally delayed. and the search for a better method for producing anaesthesia continued. Chloroform, which is much more pleasant than ether to take, because of danger to the patient even under most careful administration, has been largely discarded in the United States though it is still used rather extensively in England and on the Continent.

A great advance came with the development of nitrous oxide and ethylene oxygen anaesthesia but, at best, these agents can be considered but complemental to ether in major surgery and are to be regarded as such.

Ether given intravenously has been discarded for obvious reasons. Rectal ether anaesthesia has disadvantages, chiefly lack of controllability. Avertin used per rectum gives little promise to date and there have been cases of serious rectal irritation reported.

Much progress came with the introduction of cocaine and, later, the safer novocaine for local and radicular block anaesthesia. Except in the hands of a few masters, however, neither of these methods has found general application in major surgery.

Latterly has come a revival of spinal analgesia or spinal block, once in more or less disrepute because of accidents resulting from imperfect technic or poor judgment in the selection of cases. Under spinal block, any major surgical operation below the diaphragm can be performed without pain and without loss of consciousness and with assurance of a convalescence free from a great many of the discomforts and the actual pain commonly associated with the recovery from major surgical operations. Additionally, this form of anaesthesia eliminated surgical shock for there is complete "anoci-association" to use

Crile's phraseology. Increasing use of spinal analgesia has shown that with the proper technic, most of the hazards thought to be inherent in the method, do not exist.

All surgeons will agree that even with an entirely successful block anaesthesia, infiltrative, radicular, or spinal, long operations are apt to become an ordeal to the patient and a trial to the surgeon. There develops discomfort from postural requirements, or an exhaustive apprehension that makes the patient almost unmanageable. Proper preoperative medication assures a mental repose and. perhaps, an amnesia most grateful to the patient and helpful to the surgeon. Morphine alone though valuable, is even better combined with scopalamine in sufficient dosage and has been found very satisfactory for the past several years by the writer.

More recently the barbiturate series has deservedly found much favor. Veronal, amytal, luminal, sodium luminal, etc., act very well. They have the possible additional advantages of some antidotal action to excessive doses of novocaine. Sodium amytal, given intravenously, while it produces anaesthesia sufficient for most minor surgical procedures, will, when it finds its place, probably be used for induction rather than production of anaesthesia.

Choice of anaesthesia should not be made solely upon the prejudice of the surgeon or the whimsey of the patient. There are scientific data sufficient upon which to make a selection best suited to the needs of the patient and the equipment of the surgeon.

—J. W. Duncan.

PROCTOLOGIC HINT NO. I

Patients should be questioned as to the presence of an anal or rectal complaint. Many are reticent about speaking of these conditions, and others are ignorant as to the normal findings. Do not leave it to the patient to suggest an anal examination.

—L. E. Moon, Omaha.

Dear Reader:

The Journal and the Cooperative Medical Advertising Bureau of Chicago maintain a Service Department to answer inquiries from you about pharmaceuticals, surgical instruments and other manufactured products, such as soaps, clothing, automobiles, etc., which you may need in your home, office, sanitarium or hospital.

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We want the Journal to serve you.

EDITORIAL PARAGRAPHS

There are said to be eight physicians in Congress.

A turtle race has just been held in Omaha which tends to prove that Omaha is a fast town.

The oldest anatomical treatise extant is an Egyptian papyrus probably written sixteen centuries before the Christian Era.

Basic Science examinations will be given at the State House, Lincoln, October 7 and 8, and State Board medical examinations will be given November 20, 21, 22.

The American Congress of Physical Therapy of which Dr. Roy Fouts, Omaha, is at present president, at its meeting in St. Louis, last month, designated Omaha as the meeting place for 1931.

A hospital to be known as the Bordley Memorial for Chronic Invalids, to be established in St. Louis, is provided for by the will of Mrs. Blanche Bordley, who recently died in California.

Colonel Crimmins, a retired army officer, has published a bulletin on snake bite in which he dispels the therapeutic fallacy that permanganate of potash solution is an effective antidote for snake bite.

The Omaha Public Schools has inaugurated classes in sight conservation for children with sight defects. By means of large type, children in the special classes are subjected to the least possible eye strain.

"A $415 doctor is cheaper than a $400 funeral", says an exchange, which reminds the editor that in the long ago an unsentimental father complained after his child had died, because the doctor bill and the funeral together cost him fifty dollars.

A Committee of Congress, directed by Surgeon McCoy of the U. S. Public Health Service, states that leprosy is better handled in the Hawaiian Islands than elsewhere, the interest of the patient being more definitely considered and provided for.

Greuter, a Swiss student of endocrinology, reported the International congress for Sex Research at London that injection of anterior pituitary extract stimulated milk production in cows and goats. The practical application of this discovery to medicine may well be forthcoming.

Dr. A. C. Stokes, Omaha, secured the nomination for Regent of the State University by a handsome plurality and will no doubt be duly elected in November. The medical profession needs just such representation on the board of regents, and should bestir itself in behalf of Doctor Stokes.

The Medical Department of the United Fruit Company has issued its Eighteenth Annual Report. It is a large octavo volume of 450 pages, full of interesting reports of tropical disease conditions treated and numerous views of hospitals and homes provided for their employees and is altogether a very readable and instructive book.

Today about 25% of the 150,000 physicians in the United States indicate limitation of their work to certain fields. More than fifty per cent of medical students have chosen their specialty at time of graduation. Of 275 physicians studying at Vienna at least 225 were making efforts to prepare themselves to do nose and throat work, says Dr. Morris Fishbein in his booklet. "Doctors and Specialists".

The song "The Little Brown Church in the Vale" was composed by a Dr. William Pitts, a medical practitioner, who practiced in the Bradford, Iowa, community where the church stands. The old time village of Bradford, with the exception of a few houses, has disappeared, but the church remains. The one-hundredth anniversary of the birth of Pitts was celebrated in the church last month. The Little Brown Church is located near the present town of Nashua, Iowa.

A Metropolitan Life Insurance company report states that the death rate from acute rheumatism in the second decade of the century had declined 40%, due in part at least, undoubtedly, to tonsil operations, and the marked progress in dental and oral hygiene and improvement of the milk supplies of cities, inasmuch as efficient pasteurization of milk removes, to a great extent, the danger of epidemics of septic sore throat and of other focal infections which, in turn, are recognized causative factors in acute rheumatism. The 1929 report shows still more decline in the death rate.

The editor of the *Tennessee State Medical Journal* pours out his wrath on the present day drug store. He says "it is difficult for one to tell whether he is in a restaurant, a candy store, a patent medicine vendor's hole in the wall, or what-not". As a matter of fact, for forty years the drug store has been a junk shop. Perhaps the druggists are not altogether to blame for the present day condition of the trade. We have it on fairly good authority that in Omaha, a city of 212,000, there are but two drug stores, the prescription departments of which pay the overhead.

The president recently approved an Act of Congress which authorized the United States Public Health Service to provide medical service in federal penal and correctional institutions under the Department of Justice. Henceforth the medical and psychiatric work in Federal prisons will be supervised and furnished by personnel of that service. This new legislation is considered important in the field of penology and mental hygiene, and is part of the program for improving the condition in federal prisons, and also an effort to promote uniformity in the medical work of the federal government.

The State Bureau of Health in a recent bulletin says: "Occasionally, where contagious disease develops, a strong inclination toward closing school arises. This obsolete practice should be discontinued, for experience has demonstrated that if schools are closed in the face of a threatened epidemic and pupils not kept isolated upon their respective premises, the disease is practically certain to spread. Furthermore, upon reopening school there will, in a short time, be additional cases develop and often a serious epidemic follow." Splendid advice; but most physicians of some years of experience with local school boards have had the experience of being asked whether the school should be closed in the face of a slight endemic and being advised that it would not be necessary or advisable to close the school, have in the face of the advise sought, closed it. The perversity of some school boards is past understanding.

NECROLOGY

GEORGE O. W. FARNHAM, Lincoln, Nebr.; University of Vermont College of Medicine, 1884; physician at Bristol, Vermont, for two years before coming to Nebraska. He located at Bertrand in 1886 and in 1887 moved to Beatrice, coming to Lincoln in 1891, where he practiced nearly forty years; formerly a member, Nebraska State Medical Association; a man of extensive farm holding; died September 5, 1930, aged about seventy years. A widow and daughter survive.

CENTRAL ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS

The Central Association of Obstetricians and Gynecologists meets Thursday, October 9th, in Kansas City, in conjunction with the Kansas City-Southwest Clinical Society. Members of the Association will cooperate in conducting clinics in the morning, while in the afternoon they will provide a symposium on Normal Labor. Dr. Fred L. Adair, Chicago: Management of Pregnancy; Dr. Percy W. Tombs, Memphis: Management of the First and Second Stages of Labor; Dr. L. A. Calkins, Kansas City: Management of the Third Stage; Dr. Jennings C. Litzenberg, Minneapolis: Occiput Posterior; Dr. Fred J. Taussig, St. Louis: Breech Presentation; Dr. Rudolph W. Holmes, Chicago: Prolonged Labor; and Dr. G. D. Royston, St. Louis: Post-natal Care.

On Friday and Saturday mornings, October 10th and 11th, the Association will conduct scientific sessions at the Hotel Elms, Excelsior Springs, Missouri. Members of the profession are cordially invited to attend. Registration can be made at the Hotel—there will be no fee. Formal papers and case reports will feature the programs.

Excelsion Springs is only thirty miles from Kansas City with good interurban and bus service, and with excellent roads for those who motor.

Physicians wishing programs of the Excelsior Springs meetings may address Dr. E. D. Plass, Secretary, University Hospital, Iowa City, Iowa.

THE SEVENTH COUNCILOR DISTRICT MEDICAL SOCIETY

The tenth annual meeting of the Seventh Councilor District Medical Society will be held at the Court House at Hebron, Nebraska, Thursday afternoon and evening, October 23d, 1930, under the presidency of Dr. A. N. Anderson of Belvidere. Amongst others, Drs. K. S. J. Hohlen and J. E. M. Thomson of Lincoln will appear on the program. After dinner, Dr. E. C. Foote of Hastings will entertain the society with moving pictures taken on his trip through India and other foreign countries.

Rudolph F. Decker, Secretary.

HEALTH EDUCATION AT THE ADAMS COUNTY FAIR

A health education program was given by the Nebraska State Medical Association at the Adams County Fair, Hastings, Nebraska, August 12 to 16, 1930. Periodic health examinations were given to eighty-four adults, fifty-seven children, and eighty-nine babies.

Of the eighty-four adults examined (18 males, 86 females) eighty-two were found to have defects in need of medical attention. The following is a list of defects, or organs found to be defective:

Tonsils	45
Teeth	34
Abdominal tenderness	21
Nose	18
Ears	14
Gums	13
Bowels	12
Lungs	11
Nutrition	11
Hemorrhoids	10
Blood	9
Heart	9
Menstrual irreg.	8
Goiter	8
Skin	8
Focal infection	6
Sinuses	6
Tumors	6
Varicose veins	5
Flat feet	5
Neurotic	5
Eyes	4
Uterine	4
Perineal tears	4
Urine	4
Vaginal discharge	3
Enlarged liver	3
Hernia	2
Rectal fistula	2
Epithelioma	2
Organic nerve	1
Prostate	1
Malig. cervix	1
Enlarged spleen	1
Dislocation	1
Total	297

Of the fifty-seven children examined (27 males, 30 females) forty-seven were found to have defects. The following is a list of defects, or organs found to be defective:

Teeth	27
Tonsils	16
Adenoids	14
Nutrition	9
Posture	9
Nose	5
Heart	5
Chest	5
Spine	5
Skin	4
Thyroid	4
Male genitalia	4
Glands	4
Ears	3
Abdomen	2
Flat feet	2
Arms	2
Winged scapula	1
Lungs	1
Pharynx	1
Anemia	1
Knee reflex	1
Personal hygiene	1
Total	127

Vision and hearing not tested.

Of the eighty-nine babies examined (46 males, 43 females) seventy-five were found to have defects. The following is a list of defects, or organs found to be defective:

Nutrition	37
Teeth	20
Genitalia	19
Skin	11
Tonsils	11
Flat feet	7
Ears	5
Bad temper	5
Hernia	4
Posture	4
Thumb sucking	4
Flabby muscles	3
Eyes	2
Heart	2
Chest	2
Spine	2
Abdomen	2
Hair	2
Nose	2
Beaded ribs	2
Knock knee	2
Bow legs	2
Defective training	2
Fontanel	2
Mental	1
Nervous	1
Head shape	1
Anemia	1
Neck glands	1
Thyroid	1
Liver	1
Scalp	1
Total	162

Vision and hearing not tested.

One baby had T. A. T. Four had been vaccinated.

E. R. Hays, M. D.

THE SOCIETIES

The Madison Five County Medical Society met at the Hotel Norfolk, Norfolk, August 26. A dinner preceded the program and was attended by upward of fifty persons.

The program follows:

"Neuritis and Neuralgia," Dr. J. Jay Keegan, Omaha; discussion by Dr. Lucian Stark, Norfolk; "The Acute Abdomen in Young Children," Dr. H. B. Hamilton, Omaha; discussion by Dr. P. H. Salter, Norfolk.

Dr. Keegan's presentation was necessarily of so technical nature that the reporter could not follow it. The paper will shortly appear in this Journal. Dr. Hamilton put much stress on the diagnosis of acute appendicitis in children and gave the order of onset of symptoms as nausea and vomiting, tenderness and fever, and rigidity.

The Twelfth Councilor District Medical Society meeting was held at Scottsbluff September 19. The scientific program as published follows:

Clinic—Hereditary Ectophalangilism; Hodgkin's Disease. Case Demonstrations and X-ray—Dr. F. W. Plehn and Dr. Ralph J. Malott, Scottsbluff.

Practical Points in the Care of the New Born; and Feeding During Infancy.—Dr. E. V. Wiedman, Lincoln, Nebr.

The Management of Prolonged and Difficult Labor—Dr. H. E. Harvey, Lincoln, Nebr.

Practical Points on the Management of Surgical Brain Conditions.—State President, Dr. K. S. J. Hohlen, Lincoln, Nebr.

The Control of Communicatable Diseases—Chief State Bureau of Health, Dr. P. H. Bartholomew, Lincoln, Nebr.

The State Association—State Secretary, Dr. R. B. Adams, Lincoln, Nebr.

A banquet at the Lincoln Hotel in the evening had the following pretentious program:

Toastmaster—Dr. F. B. Young, Gering, Nebr.

Dr. K. S. J. Kohlen, State President.

Dr. R. B. Adams, State Secretary .

Dr. P. H. Bartholomew, Chief State Bureau of Health.

Dr. F. V. Wiedman, Dr. H. E. Harvey and others.

Our Changing Medical Times—Dr. A. L. Miller, Kimball, Nebr.

The Cedar, Dakota, Dixon, Thurston and Wayne counties medical society met at Randolph on Aug. 21 where the goodly number present enjoyed the following program:

"Nephrosis" by Dr. C. L. Phillips, Dixon; "The Use of Foreign Protein in the Treatment of Peptic Ulcer" by Dr. P. F. Siman, Wayne; "Undulant Fever" with report of a case, by Dr. G. E. Peters of Randolph; "Some Diseases of the Skeloton in Infants and Children" with lantern slides, by Dr. J. N. Lands, Sioux City.

Following the meeting, all retired to the home of Dr. A. E. Cook where a dinner was served.

—C. L. Phillips, Sec.

The **Otoe County Medical Society** meeting at Nebraska City, September 8, was numerously attended by physicians of the county and surrounding towns and some from Hamburg and Sidney, Iowa.

Dr. W. H. Taylor, Omaha, gave a screen lecture on some obstetrical, problems; Dr. Clyde Moore, Omaha, spoke on serum immunization in children, and Dr. A. E. Bennett, Omaha, read a paper on early diagnosis and treatment of anterior poliomyelitis. The meeting was an unusually interesting one.

The Ninth Councilor District Medical Society meeting was held at Grand Island September 9. The scientific program was as follows:

"Fractures at the Elbow," Dr. Robert D. Schrock, Omaha; discussion by Dr. L. M. Stearns, Kearney, and Dr. C. G. Amick, Loup City.

"Eye Conditions in India" (with moving pictures), Dr. Eugene C. Foote, Hastings; discussion by Dr. C. H. Fox, Kearney, and Dr. E. G. Johnson, Broken Bow.

"Surgery of the Upper Abdomen," Dr. E. A. Watson, Grand Island; discussion by Dr. C. J. Miller, Ord, and Dr. F. A. Burnham, Arnold.

"The Mechanism of Hysteria," Dr. Ernest Kelley, Omaha; discussion by Dr. L. W. Forney, Mason City, and Dr. A. W. Anderson, Lexington.

The evening meeting was featured by a banquet and a talk by Councilor Bryson on the proposed public health program to be given at county fairs.

Dr. B. R. McGrath, Grand Island, was elected president; Dr. F. A. Burnham, Arnold, vice president, and Dr. W. E. Rose, Kearney, was reelected secretary-treasurer.

HUMAN INTEREST TALES

Dr. W. C. Kener has located at Glenvil.

Dr. Harry Dorwart has located at Overton.

Dr. Horace Porter has located at Falls City.

Dr. C. W. Pollard, Omaha, motored to Los Angeles in September.

An addition to St. Francis hospital, Grand Island, is under construction.

Dr. E. S. Jarmin, formerly located at Minden, has moved to Gothenburg.

Dr. and Mrs. R. D. Bryson, Calloway, announce the arrival of a baby girl.

Dr. C. R. Williams has located at Hemingford. He came from Kansas City.

Dr. W. H. Slattery, Lincoln, visited points east as far as Toronto last month.

The marriage of Dr. Donald Fuhrman and Miss Faye Hasse, McCook, is reported.

Dr. Ward Peterson, Omaha, and Miss Helen Hecox, of Los Angeles, were married recently.

Dr. Paul Garvin, formerly of Denver, has become associated with Dr. G. J. Hand, Alliance.

Dr. Joseph Huennekens, Milwaukee, visited relatives at Crofton and Fordyce, in September.

Dr. Mortimer Houser, Tulsa, Okla., a practitioner at Arapahoe 23 years ago, visited his old haunts last month.

Dr. J. M. Triplett, physician to the Soldier's Home, Grand Island, recently returned from a visit to Kansas City.

Dr. C. R. Carlson, Wauneta, submitted to an operation for calculus of the bladder, in an Omaha hospital recently.

Dr. J. A. Tamasea, Omaha, was elected vice president of the Aero Medical Association at a meeting held in Chicago.

Dr. A. M. Sonneland and family, Norfolk, have gone to Vienna where the doctor will do special work in internal medicine.

Dr. N. H. Blakeley, for some years in practice at Auburn, has located at Wahoo in succession to Dr. E. O. Weber, deceased.

Dr. George P. Pratt, Omaha, gave a lecture on typhoid fever before The Nebraska State Nurses' association last month.

Dr. Frank A. Neissius has located at Humphrey. He has taken over the former office and residence of the late Dr. A. Cauley.

Dr. and Mrs. A. A. Martin, Toronto, located at Pierce for about ten years previous to 1920, visited at Pierce during August.

Dr. Roland Tyson, connected with the medical service of the Northern Pacific R. R., visited his parents at Weeping Water, last month.

Dr. C. J. Goebel, formerly of Sioux City and Hartington, has located at Bloomfield in succession to Dr. J. H. Mettlan, who died recently.

Dr. R. C. Byers, Fremont, and Dr. G. A. Byers, Scribner, attended the meeting of the British Medical Association at Winnepeg in August.

Dr. and Mrs. Guy Seward, Fremont, attended the national convention of the Veterans of Foreign Wars, of which body Dr. Seward is surgeon.

Dr. and Mrs. L. B. Pillsbury visited in Lincoln, their former home, recently. The doctor is now connected with the Walter Read hospital, Washington.

Dr. D. B. Wengert, formerly of Grand Island, has purchased the office equipment of the late Dr. Ole Grotham, St. Paul, and will continue the practice.

Dr. F. H. Morrow, Columbus, who suffered an infection in one of his legs some time ago, has returned from California and has resumed practice.

Dr. A. A. Bald and family, Platte Center, motored to the Pacific Northwest, parts of Canada and the Yellowstone during the period of hot weather in Nebraska.

Dr. Edwin Davis, Omaha, appeared on the program of the Southern Minnesota Medical Society at Mankato, recently. Mrs. Davis and the doctor also enjoyed an excursion on the Mississippi river.

Dr. R. B. McKenney, who quite recently located at Brady, coming from Joliet, Ill., collapsed and died shortly after being taken into custody by an officer for some irregularity in the issuance of a check. He is thought to have taken poison.

Lieutenant Robert Estill of the Army Medical Corps, and Miss Mary Harajian of Peru, were married at Battle Creek, Mich., recently. They will live at Washington, D. C., for the next year. Dr. Estill is the son of Dr. and Mrs. Estill of Bridgeport.

SEPTIC SORE THROAT

According to David J. Davis, Chicago (*Journal A. M. A.*, Sept. 28, 1929), the present status of the epidemiology of septic sore throat is much the same as it was twenty years ago. Outbreaks are rare. They occur here and there and probably will continue to do so. No doubt, epidemics are now being observed that years ago would not have been recognized. Modern methods of pasteurization and the careful supervision of certified milk products, together with new methods of identifying *Streptococcus epidemicus* should do, and possibly have already done, much to prevent epidemics. Much still remains to be done, however, in the control of milk supplies before the disease can be completely eradicated. *Streptococcus epidemicus* seems to be the specific cause of the disease and is so regarded by those who have most carefully studied it. Studies of the more recent epidemics by various workers indicate that the usual if not the only route of transmission of the streptococci is from a human being to the teat and udder of a cow, through contact. Here they incubate and rapidly multiply. They then pass out in the milk directly to the throat of the consumer. Strains of *Streptococcus epidemicus* yield a specific soluble toxin which varies to some degree from the toxin of the scarlet fever steptococcus.

ROSTER OF OFFICERS—1930

K. S. J. Hohlen, Lincoln, President	1931
Lucien Stark, Norfolk, President-elect	1932
J. M. Willis, McCook, Vice President	1932
F. B. Young, Gering, Vice President	1932
R. B. Adams, Lincoln, Secretary-Treasurer	1931

COUNCILORS

A. P. Overgaard, Omaha, Secretary	1933
H. J. Lehnhoff, Lincoln	1933
W. R. Boyer, Pawnee City	1933
A. E. Cook, Randolph	1933
Morris Nielsen, Blair	1931
Frank Tornholm, Wahoo	1931
H. E. Potter, Fairbury	1931
W. J. Douglas, Atkinson	1931
R. D. Bryson, Callaway	1932
L. W. Rork, Hastings	1932
C. A. Selby, North Platte, Chairman	1932
A. L. Cooper, Scottsbluff	1932

DELEGATES TO THE A. M. A.

B. F. Bailey, Lincoln	1931
R. W. Fouts, Omaha	1932

DELEGATE TO COUNCIL ON MEDICAL EDUCATION OF THE A. M. A.

J. S. Welch	Lincoln

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SYMPOSIUM: TRAUMATIC SURGERY

THE NEBRASKA STATE MEDICAL JOURNAL

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FRACTURES OF THE UPPER EXTREMITY*

J. E. M. THOMSON, M. D., F. A. C. S.,
Lincoln, Nebr.

The discussion of the subject assigned to me as a part of the symposium on Traumatic Surgery, in which the time is restricted, must, therefore, be limited in its scope. It is my purpose to bring to your attention those fractures of the upper extremity which have proven more common in my practice and which have offered exacting problems for the restoration of function, and further, in the treatment of which the application of certain well tried principles have brought excellent results.

Many of the distressing disabilities following fractures of the upper extremity are not due to mal-position of the bony fragments, but rather are due to lack of understanding of certain physiological mechanical principles which should be taken into consideration during the period in which the fragments are immobilized. In other words—the fractured fragments should not only be in good alignment and apposition with each other during the period of immobilization, but their relation to the other bones and parts of the extremity as well as to the trunk itself must be taken into consideration, and only thereby can the maximum return of function and rehabilitation, be accomplished. One must always bear in mind, and particularly is this true when the fracture is near the end of the bone, that there is one fragment which is controllable; that is, which can by manipulation be brought into proper apposition, alignment and rotation with the other uncontrollabe fragment. Secondly, the fractured extremity must always be immobilized in the position of election for that particular fracture in order that return of function may not be delayed and convalescence prolonged due to the fact that the arm was placed in a position and immobilized in such a way as to interfere with normal early return of function.

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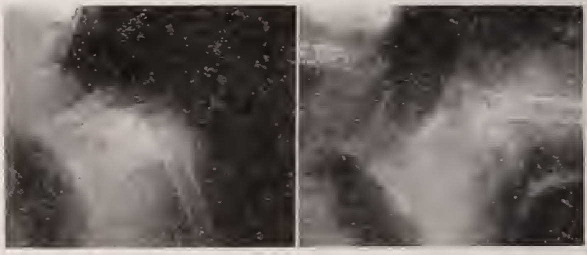
*Presented before annual meeting Nebraska State Medical Association, Lincoln, May 13-15, 1930.

Some of the most distressing disabilities that we come in contact with due to injuries and fractures of the upper extremity are those in and about the shoulder joint. The injury may seem slight, but disability following may be excessive. The reason for this is that the shoulder joint is structurally weak in regard to its osseus and ligamentous components, the cavity is shallow, the head of the humerus large, capsule and other ligaments loose and thin. Its support and strength lie in the fact that it is surrounded by a group of powerful muscles, therefore, when injury occurs in this region and healing takes place with the arm bound to the side of the body, gravity pulls and weakens the muscles and ligaments, thereby the disability that follows may be extensive, due primarily to scar formation fixing the arm in a dependent position, and secondarily to the loss of muscular tone caused by the dependent position in which the arm has been carried.

The shoulder is a ball and socket joint and permits of motion in every direction. Flexion or forward motion of the shoulder is carried to a range of nearly 180° by the efforts of the pectoralis major and the anterior fibers of the deltoid. The backward motion or extension has a range of 45° and is carried out by the *latissmus dorsi* and *teres major* muscles. Abduction or the moving of the arm away from the body, is begun by the *supraspinatus* and carried to about 90° by the *deltoid*. At this point the shoulder joint motion comes to an end—the further tilting upward is due to the tilting of the scapula by the *trapezius* and *serratus magnus*, the former raising and drawing the outer angle of the scapula to the midline, the latter carrying the internal angle of the scapula to the opposite position.

Internal rotation is produced by the *subscapulars* and to a lesser extent, by the *pectorals* and the *teres major*. External rotation is produced by the *supraspinalis* and *teres minor*.

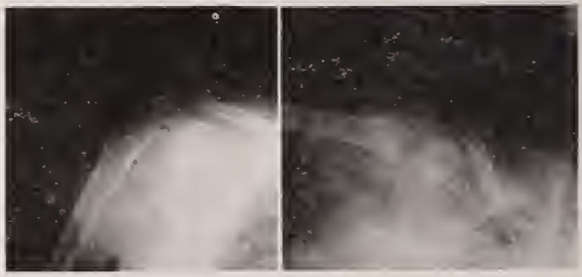
Complicated severe fractures to the shoulder joint region or injuries to the soft tissue structures thereabout which might ultimately lead to an ankylosis of the shoulder, should be immobilized in a position that will bring the most useful ultimate functional result, in other words, anchor the humerus to the scapula in a position which will bring optimum function. To accomplish this the arm should be abducted to 70° or 75° and with enough flexion to bring the elbow to the same vertical plane as the anterior surface of the chest, rotated outward about 15° or 20° from the horizontal line of the body so that the hand can be carried directly to the mouth when the elbow is flexed. The motion of the scapular muscles causes it to be elevated. In this position the muscles causing abduction are not stretched and preserve their tone. The adduction movement is easily recovered by gravity.



Case 1

Case No. 1. First roentgenogram shows a fracture of the neck of the humerus. Second roentgenogram, the arm is in a position of abduction in a plaster of Paris spica.

Simple dislocations will not be discussed except to say that since the absolute rest period of treatment is of such short duration, disabilities of the shoulder joint do not ordinarily occur. There are, however, some very severe dislocations of the shoulder with minor fractures of the great trochanter or the glenoid portion of the scapula that must be treated in abduction in somewhat the same position discussed above, because of the mutilation and tearing to practically all the soft structures about the joint. I speak particularly of those dislocations which come from severe twisting and distorting violence to the shoulder.

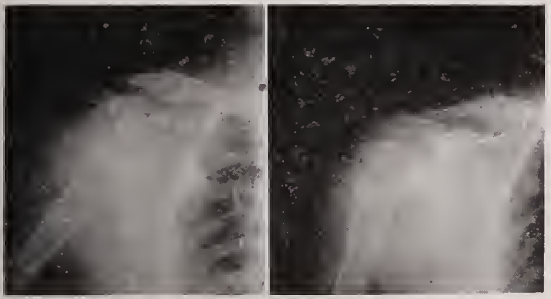


Case 2

Case No. 2. Roentgenogram of a woman 65, with a dislocation of the head of humerus and a fracture of the anatomical neck with displacement of the shaft. In this instance open operation was performed. It was found that the head was fractured and on account of her age the head was removed, the upper end of the shaft rounded off and placed in the glenoid cavity in abduction with a satisfactory end result.

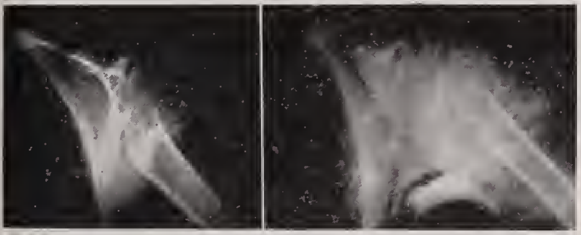
Fractures of the surgical neck of the humerus most frequently occur in the young adult and middle aged, while fractures of the anatomical neck are usually found in those of advanced years. Epiphyseal separation occurs before adolescence.

The position of election for immobilization of this type of fracture is abduction. The overriding is corrected by traction and manipulation. This can be accomplished by means of the Thomas ring splint with the patient in bed; or better, for permanent immobilization, in a plaster of Paris abduction spica splint which holds the arm in an appropriate position to maintain alignment of the fragments as this procedure allows the patient to be ambulatory. It is seldom essential to give an anaesthetic in this type of case to obtain reduction for with proper cooperation and perhaps the use of a narcotic, reposition of the fragments can usually be accomplished. What one actually accomplishes by this procedure is to bring the long controllable fragment or shaft of the humerus into a position for fixation which will bring it into apposition and alignment with the short uncontrollable abducted head of the humerus. This also means that the fracture will be dressed in a position to give optimum function to the arm should stiffness develop in the shoulder, and further the pull of gravity on the shoulder structures will be prevented. It is sometimes necessary to rotate the arm outward or inward or fix it a little forward or backward in some instances in order to attain satisfactory position but by use of the x-ray and fluoroscope this can be accurately achieved.



Case 3

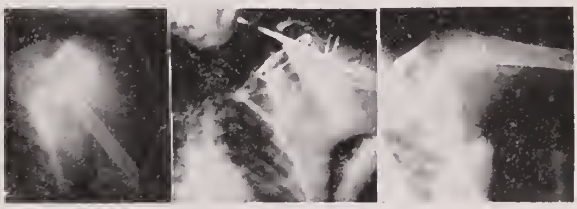
Case No. 3. Fracture dislocation of the head and greater trochanter of the humerus. End result with good function although a little calcarious deposit still is evident about the subdeltoid bursa.



Case 4

Case No. 4. A comminuted fracture of the surgical neck of the humerus and head in a patient 78 years of age. Reduction in plaster spica cast. The patient's recovery was complicated by chronic asthma and lobar pneumonia which he had at the time of his injury.

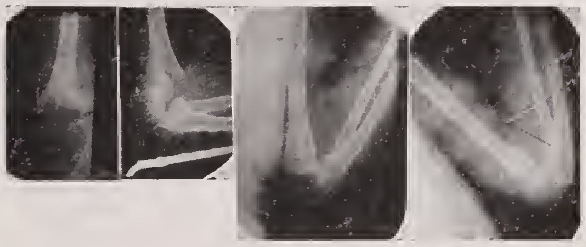
After three weeks in the plaster of Paris cast the top of the arm portion of the cast can be taken off and massage be instituted, thereby stimulating muscular tonicity. An aeroplane splint may be applied at the end of three or four weeks in which the patient may actively move his arm upward above an angle of the splint and after a period of five or six weeks this can be dispensed with. Active movement, particularly in abduction, must be encouraged for two or three months more.



Case 5

Case No. 5. Fracture of surgical neck of humerus. Displacement two weeks standing. Reduction by use of a lever inserted between the ends of the bones and imbedded in the plaster of Paris spica splint for two weeks. The last roentgenogram shows the end result. All the roentgenograms of the shoulder should be taken for stereoscopic examination, in that way only can satisfactory deductions be made in regard to whether the fracture has been properly reduced or not.

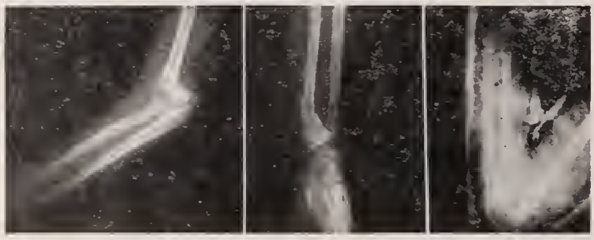
Fractures of the shaft of the humerus occur at any level between the surgical neck and supracondylar region and they are of every type: Oblique, spiral, transverse, with or without displacement, longitudinal, comminuted and compound. They accur during all ages, from the infant to the elderly adult. If the injury occurs above the deltoid insertion the upper fragment is adducted by the muscles inserted into the biceptal and intertubercular groove of the humerus, that is, the *pectoral major* or *latissmus dorsi* and *teres major*, and the lower fragment is abducted by the deltoid. This, of course, demands that the arm be dressed in a position at the side of the body as the upper uncontrollable fragment is drawn in that direction and the lower control-



Case 6

Case No. 6. Fracture of the lower end of the humerus with marked displacement. Fracture partially reduced in metal splint but with rotation of the lower fragment. Fracture reduced and rotation corrected.

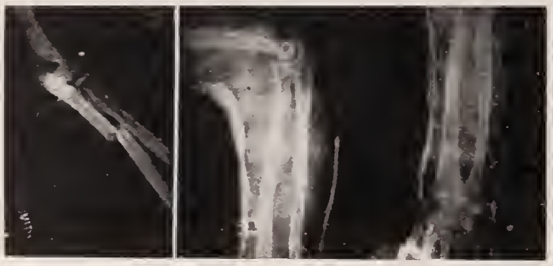
lable fragment can be brought into alignment by this procedure. For this purpose the Jones humerus splint or Wilson's modification of this splint is perhaps the best appliance we have for such immobilization. However, in many instances it is possible to apply a mild abduction plaster spica with the arm at 15° to 25° away from the body and attain splendid coaptation of the fragments. Often a triangle brace under the arm and against the body also gives an excellent result. However, in using those methods of fixation the forearm must be splinted in 90° of flexion and in the same plane as that of the arm, otherwise the forearm bandaged to the body causes rotation to the humoral fragments followed by an unsightly deformity of the carrying angle and a distressing disability.



Case 7

Case No. 7. Fracture of the lower end of the humerus complicated by a fracture of the lower end of the radius. Reduction in a plaster of Paris flexion splint.

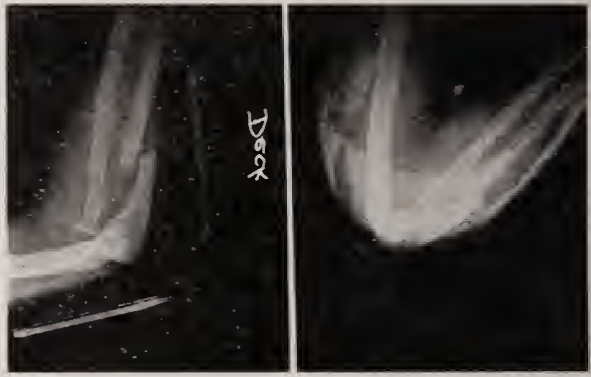
Fractures below the insertion of the deltoid should always be immobilized in moderate abduction or in the same angle as the abduction of the upper fragment. In this instance the abduction plaster of Paris spica splint offers the surest and safest support to the arm. The forearm is flexed to an angle of 90° with the arm in mid pronation and supination. When the injury is complicated by damage to the radial nerve, which is not an uncommon occurrence in fractures of the mid shaft of the humerus, the hand should be held in dorsiflexion or the so-called cock-up position.



Case 8

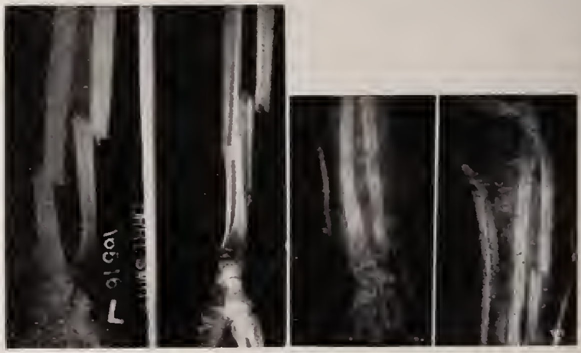
Case No. 8. Fracture of the upper third of the ulna with displacement towards the radius. Reduction in plaster of Paris cast with forearm in 90 degree flexion with arm, and hand in dorsiflexion. Reduction in this instance was accomplished by means of a lever which was removed after the fragments were approximated.

In the treatment of all extensive injuries about the elbow joint one must consider the possibility of ankylosis in a position of optimum function. This position of optimum, however, is dependent on whether the patient is right or left handed. Ordinarily, if right handed, the angle of flexion that is most useful is at an angle of about 70°, as this permits the individual to bring the hand to the mouth. In the left arm the position of ankylosis should be at about 110° or 115°, however, from the standpoint of restoration of function to the elbow, a greater range of motion can be obtained more quickly if the elbow is placed in complete flexion. By force of gravity and by the carrying of objects, restoration of extension can be accomplished from this position much easier than can flexion be obtained from the extended position. Not only that, but the possibility of restoring position to the fragments in these elbow fractures is far greater in the flexed position for with the forearm splinted against the arm there is little opportunity to lose the alignment. There is one exception to this, and that is fractures of the olecranon process of the ulna,



Case 9

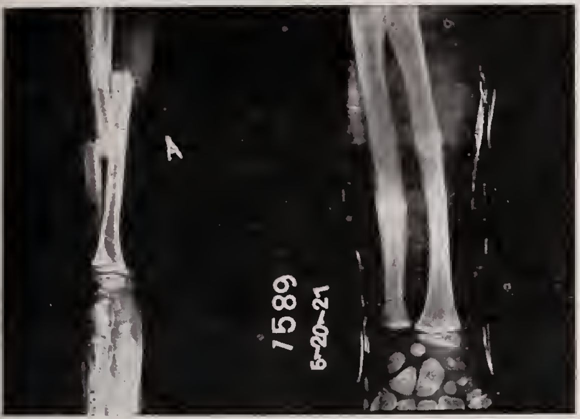
Case No. 9. Fracture of the upper third of the ulna treated in acute flexion, reduced by lever inserted between the ends of the bones.



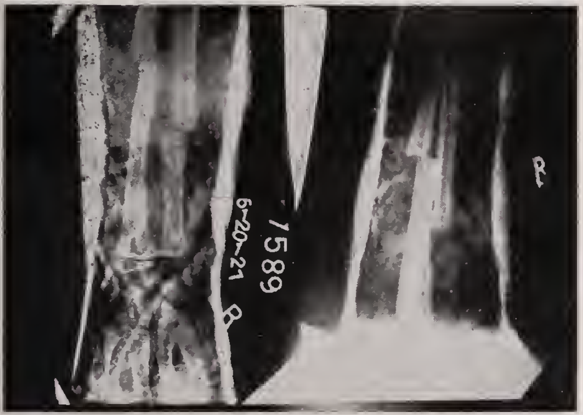
Case 10

Case No. 10. Fracture of both bones of the forearm with a greenstick fracture of the lower third of the ulna. Approximation accomplished by levers inserted between the fractured fragments. Plaster of Paris arm and forearm cast with the forearm flexed to an angle of 90 degrees, hand in dorsiflexion and supination.

these necessarily must be placed in extension in order to dress the controllable fragment in line with the uncontrollable. Usually the small, short, lower fragments of the humerus are displaced either forward or backward, depending upon the way the violence is directed against the bone. Therefore, we always dress these fractures about the elbow joint in complete flexion or as near complete flexion as possible, depending upon the swelling, and we make sure that the forearm is held in the same plane as the arm and in supination. To accomplish this it is necessary to immobilize the arm to the body and the forearm away from the body in the same vertical plane as the arm by a figure of eight plaster of Paris bandage about the shoulder body and flexed forearm. If this is not done, or if the forearm is bound to the body, there is a tendency for rotation of the lower fragment of the humerus inward on the shaft and deformity of the fragments follow with loss of the carrying angle of the extremity. This same position should be maintained in fractures of the head of the radius and is also highly essential in the treatment of fractures of the coronoid process of the ulna. Without flexion the coronoid process is displaced markedly upward by the action of the brachialis anticus muscle. After two weeks of immobilization active motion and massage are guardedly instituted and supervised. Evidence of increased pain and swelling is an indication for a diminution of activity. The elbow region is very prone to develop myositis ossificans or ossifying hematoma which often proves very distressing, complicating factors in the progress of the case and delaying return of function materially. It has been my observation that early forceful activity in accomplishing extension often seems to have an influence in provoking these complications. Apparently forceful manipulation of the elbow joint during this early period of healing often causes hemorrhages into the muscle sheaths and about the joint spaces with osseus formations resulting therefrom.

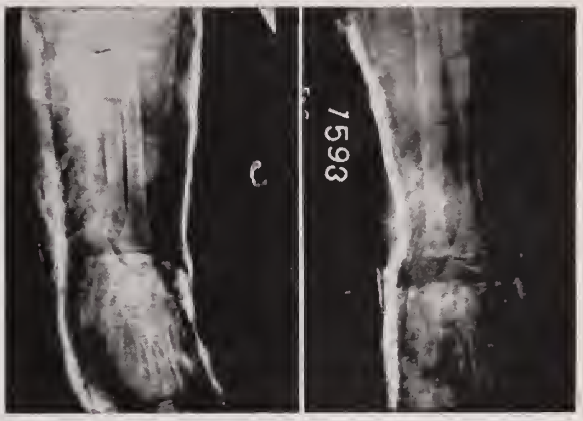


Case 11A

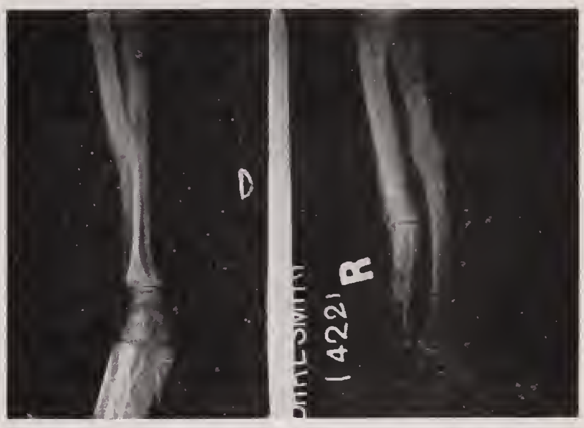


Case 11B

Case No. 11. (A) Fracture of both bones of the forearm. Placed in a plaster of Paris arm and forearm, 90 degree flexion with the forearm in supination. Full length was accomplished but inadequate approximation in the lateral view (B) which did not please the parents.



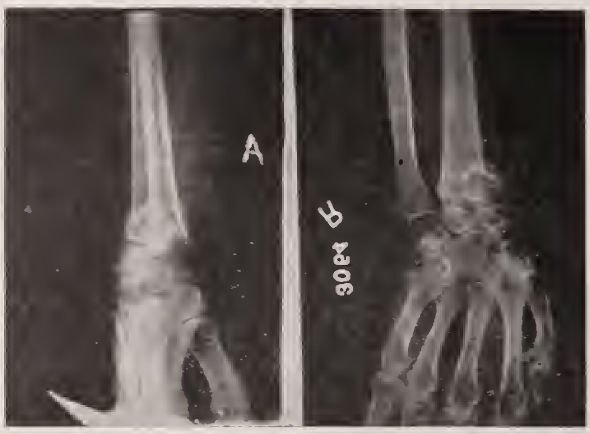
Case 11C



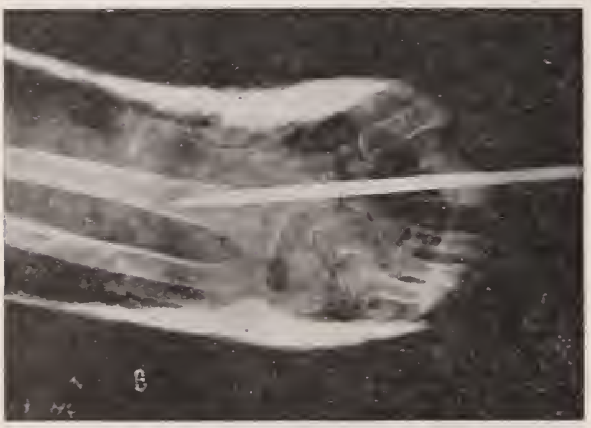
Case 11D

Note the windows in the plaster splint (C) and the good result obtained by leverage through windows in the cast. The end result eight weeks after (D).

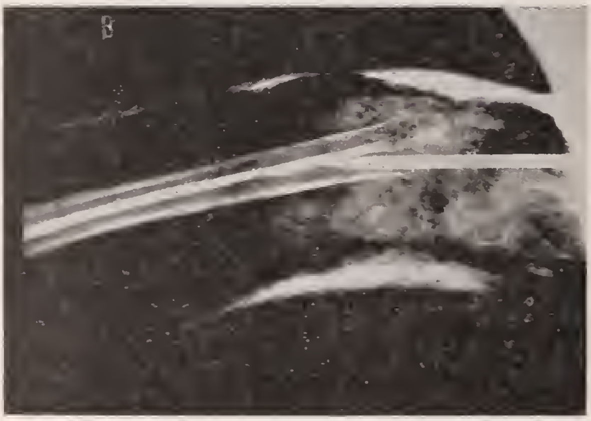
Nerve injury is quite common in this region and when recognized the hand should be splinted in dorsiflexion. Fortunately most of these nerve injuries recover happily but there are a certain number that are compressed in callus or scar tissue and require surgical intervention.



Case 12A



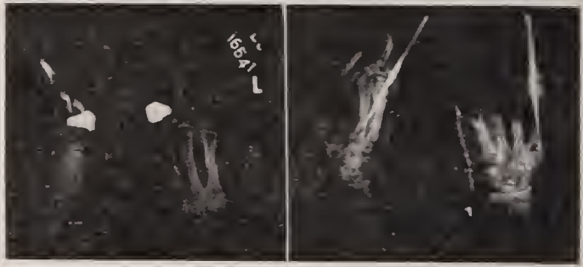
Case 12B



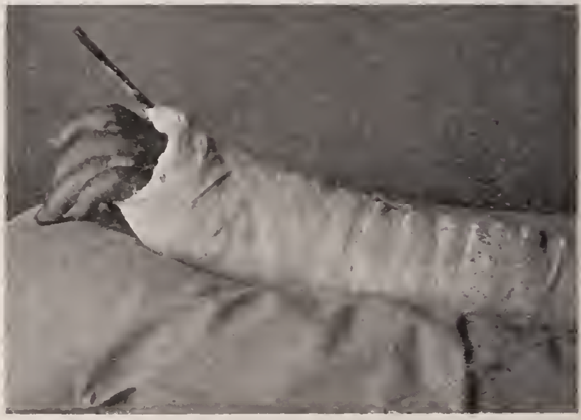
Case 12C

Case No. 12. Comminuted fracture lower end of radius and with impaction (A). Fragmentation of the lower end of the radius extreme. Adequate reduction was obtained by the use of a lever between the ends of the fragments with full length of the radial side of the forearm (B-C).

Fractures of the shaft of the radius and ulna, whether one or both bones are fractured, always deserve the greatest consideration, as alteration of the axis of the joint, the diminution of pronation and supination due to allowing these bones to heal in deformity, may diminish the function and usefulness of the hand markedly. Therefore, it is very essential to attain complete restoration of alignment and apposition of the fragments as from faulty apposition and alignment the interosseus space is often reduced between these bones and a cross union follows which diminishes their functional activities. Likewise, faulty position may have an influence in causing non-union or delayed union which is so commonly seen in this type of fracture. Hence, after reduction is accomplished it is quite essential that adequate immobilization be instituted. Such immobilization implies the fixation of the wrist as well as the elbow joint. For this purpose plaster of Paris splints are preferable to any other type of apparatus. The plaster splint should extend well up on the arm, the elbow should be flexed to an angle of 90°, usually with the forearm in supination and the hand in dorsiflexion. Fixation of the elbow in 90° of flexion and the hand in dorsiflexion effects traction and counter-traction upon the fragments, that is, there is a pull against the biceptial region of the humerus and



A Case 13 B



Case 13C.

Case No. 13. Old fracture of the metacarpal of the first finger (A). Reduction accomplished by means of a lever imbedded into the plaster of Paris cast (B).

a counter pull against the palm of the hand, or vice versa, stabilizing the four fragments and the two joints, thereby preventing movement and loss of position.

With the exception of fractures of the ulna and certain fractures of both bones of the forearm the position of supination is usually considered the best. If the radius alone is fractured, the rotary displacement of the lower fragment is prevented and the important radial convexity preserved. It also holds the radius and ulna well separated and minimizes the danger of interosseus union between the fragments. Further, supination offers the optimum position for recovery of normal use of the hand and function to the forearm, as the normal use of the hand is with the forearm pronated and every effort to use the hand will have a tendency to increase this range of motion. Fractures of the ulna are the exception of this rule as the lower fragment is always drawn towards the radius by the pull of the tense pronator quadratus muscle when the forearm is supinated, but in a position of pronation the muscle is relaxed and the position of the fragments can be maintained. They are thereby pushed away from the radius and ulnar deformity is prevented and likewise limitation of pronation. This position of pronation brings the bones in close apposition yet the danger of synostosis is but slight if immobilization is not kept for too long a time.

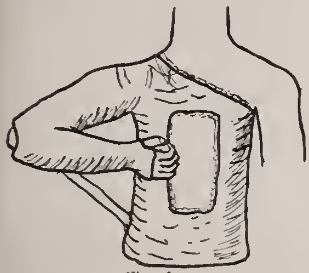


Fig. 1

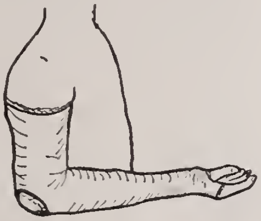


Fig. 2

Fig. No. 1. Position for election for fractures of the neck of the humerus, the arm abducted to such a position that the long controllable fragment of the humerus is placed in apposition and alignment with the short uncontrollable. The forearm is flexed on the arm to an angle of 90 degrees and in midpronation and supination. A plaster of Paris body spica insures adequate fixation during the period of immobilization. A portion of the cast can be removed for active motion after three weeks. Note that the cast has been cut out over the olecranon prominence behind the elbow joint.

Fig. No. 2. Position for election for most fractures of the shaft and the radius and ulna. The forearm is placed in supination, the hand in dorsiflexion, the forearm is flexed to an angle of 90 degrees. A plaster of Paris splint covers the arm, forearm and hand to the fingers. Note that a window is cut out over the oelecranon process behind the elbow joint to prevent pressure on this region.

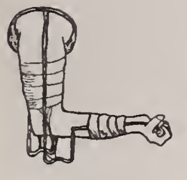


Fig. 3

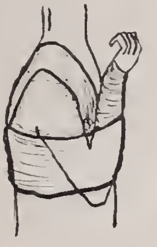


Fig. 4

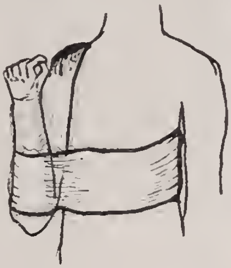


Fig. 5

Fig. No. 3. Position for election for most fractures of the shaft of the humerus. The arm is at the side of the body in a Jones humerus splint or one of the various modifications of this splint. When the fracture of the humerus is below the insertion of the deltoid very often a plaster spica arm cast is preferable, or one of the commercial abduction splints which allow mild abduction.

Figures No. 4 and 5 represent the position of election for fractures of the lower end of the humerus and head of the radius, in fact most fractures about the elbow joint except fractures of the olecranon process. The position, that of acute flexion of the forearm on the arm, the forearm held in supination and in the same plane with the side of the body by means of a plaster of Paris dressing about the body, thereby preventing rotation of the lower fragments of the humerus on the upper that so often occurs when the forearm is dressed against the body in flexion.

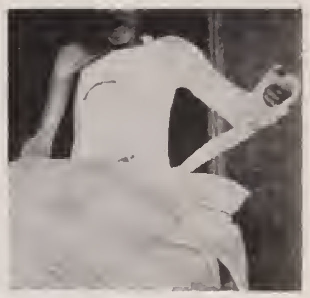
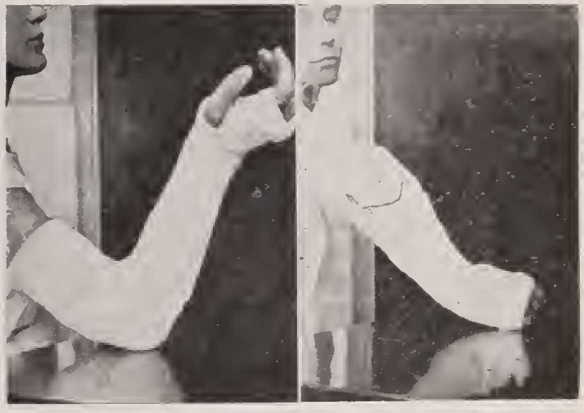


Fig. 6

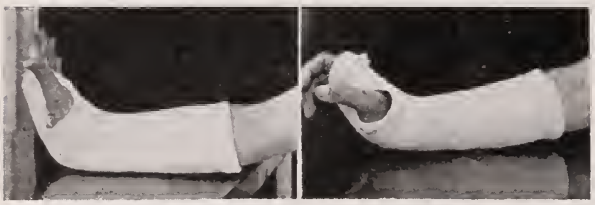
Fig. No. 6 (Case No. 4). Photograph of patient No. 4 in plaster of Paris spica splint. This patient had a comminuted fracture of the surgical neck of the humerus.

Immobilization of forearm fractures should continue for eight weeks, however, at the end of at least four weeks the plaster splint may be removed to assure the maintenance of position. Quite often there is a tendency on the part of the flexor muscles to cause an over convexity of the fractured radius, ulna or both bones and with the re-application of a new plaster splint this can be corrected.


Figures 7 and 8.

Figures No. 7 and 8. Plaster of Paris splint for fracture of the shafts of the radius and ulna. The forearm placed at an angle of 90 degrees with the arm hand in dorsiflexion and supination. Note the circular mark over the olecranon prominence which is to be cut out immediately.

Impacted fractures of the lower end of the radius cause a shortening of the inner side of the forearm and are accompanied by a dislocation of the lower end of the ulna backwards or forwards, resulting in painful, unfortunate disabilities of the hand and wrist. It is, therefore, very essential in every instance to thoroughly break up impactions of the lower end of the radius using strong trac-impaction, and then with the forearm in pronation and dorsiflexion to completely break up this paction, and then with the forearm in pronation, tion, the hand in ventraflexion, the normal central tip or downward tilting of the lower articulating surface of the radius can be achieved. This position also brings the lower radial ulnar articulation into proper position. A molded circular plaster of Paris splint well padded, with the arm in this position is a most satisfactory dressing, however, at the end of a week it is perfectly safe and indeed appropriate to remove this dressing and place the forearm in supination, the hand in dorsiflexion in a plaster of Paris splint to hold it in this position. The fingers should always be left free and active motion encouraged. At the end of two weeks active motion is begun under supervision and a small cock-up metal splint which can be readily removed is applied in place of the plaster. Within a relatively short time function will return to the hand and wrist. In some of these cases it is essential to use physiotherapeutic measures in order to hasten the convalescence.



Figures 9 and 10

Figures 9 and 10. Plaster of Paris splints for fractures of the Colles type. No. 9 shows the hand in vertraflexion. No. 10 shows hand in dorsiflexion.

There are certain splint manufacturers who have devised series of very adequate splints for all types of fractures of the upper extremity; a few of the most adaptable of these types of splints are illustrated. They are so constructed as to very effectively furnish traction, counter-traction, and proper position for the fractured fragments in their relation to the trunk and other bones of the extremity. I, personally, have a preference for the plaster of Paris splint or cast; it seems to adapt itself more easily to the individual case treated, also it makes possible through fenestrations in the cast, operative intervention. In other words, once you have your fracture fragments put up in a plaster of Paris splint in the position of election or the position in which after apposition and alignment of the fragments have been obtained, the optimum amount of function can be expected. If, in this position you find that you have not accomplished all that you expected in the way of alignment and apposition, but have obtained practically full length of the fragments, then a window can be cut out in the cast over the deforming fragments and after completely cleaning and preparing the skin for operation the edges of the cast are protected by sterile towels and a minor surgical procedure followed, thereby bringing about the desired alignment of the fragments.

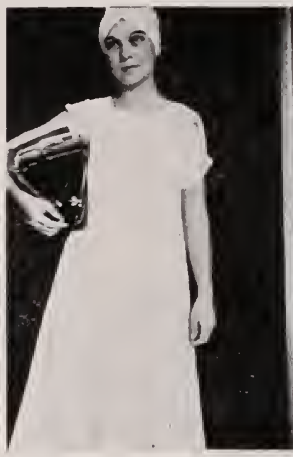


Fig. 11

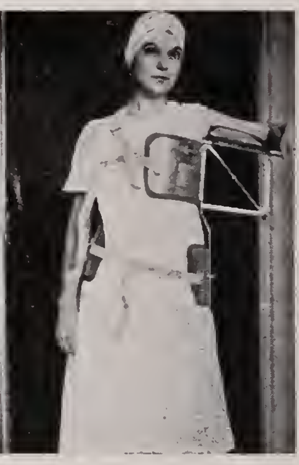


Fig. 12

Fig. No. 11. Commercial splint for fracture of the shaft of the humerus, can be treated in abduction and traction.

Fig. No. 12. Commercial type of aeroplane abduction splint.

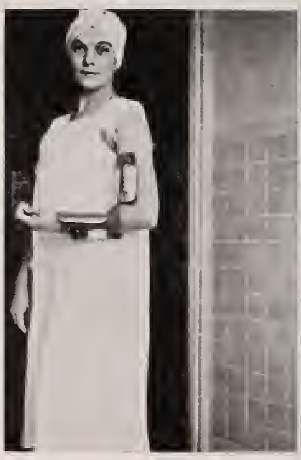


Fig. 13

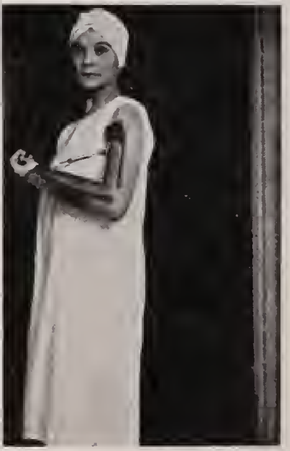


Fig. 14

Fig. No. 13. A commercial modification of the Jones Humerus splint.
Fig. No. 14. Commercial flexion splint for injuries in the elbow region.

When the fragments are brought into position by this method usually no non-absorbable material is necessary to maintain position. I have used at times through small drill holes, a strand of chromic catgut to tie the fragments together until callus has begun to form, however, I much prefer the use of a removable appliance or lever between the fragments to accomplish reduction and maintain position. This method I first reported in the *Journal of Surgery, Gynecology and Obstetrics,* and have made more recent reports before this association, and others during the past ten years. However, the surgeon must be adequately equipped and use meticulous technique in every open procedure on fractured bones for without such care disaster and infection might result. Its effectiveness makes the apposition and alignment more exact, it requires only a puncture wound in most instances and can be accomplished under a fluoroscope.

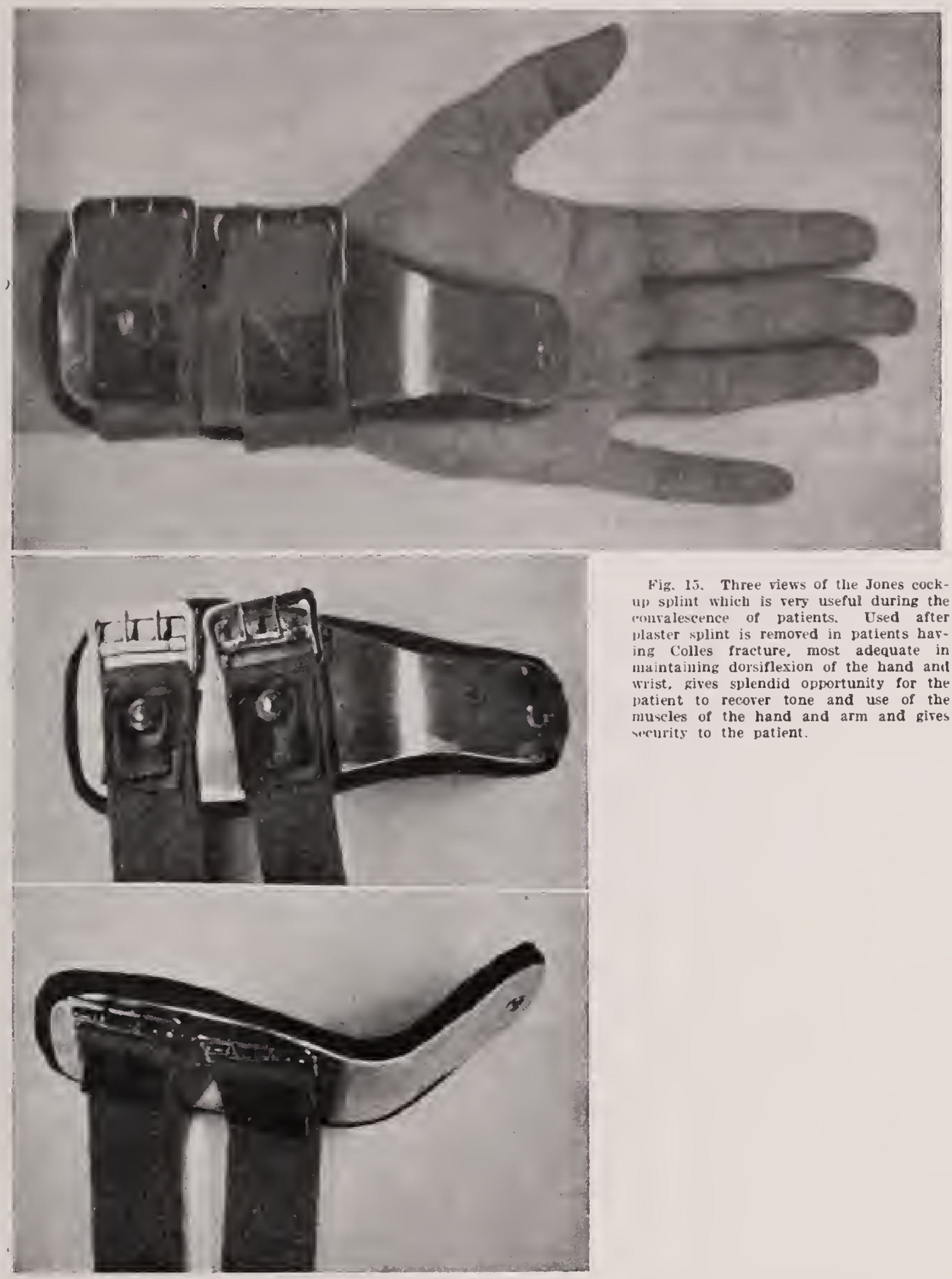


Fig. 15. Three views of the Jones cock-up splint which is very useful during the convalescence of patients. Used after plaster splint is removed in patients having Colles fracture, most adequate in maintaining dorsiflexion of the hand and wrist, gives splendid opportunity for the patient to recover tone and use of the muscles of the hand and arm and gives security to the patient.

Fig. 15

If necessary, the lever after attaining reduction can be imbedded in the cast and left between the fractured fragments, however, in many instances this is not necessary and it can be removed altogether after the bony fragments impinge against each other. If, however, it is found necessary to leave the lever in position between the fragments it should be removed at the end of ten days or two weeks, at which time sufficient healing has taken place around the fragments and position is not likely to be lost. I have never had an infection following the use of this method nor have I felt that healing has been delayed in a single instance. The period of convalescence and healing by this method is considerably shorter than when an extensive open operation is performed upon the bony fragment. The reason for this is aside from the trauma to the soft tissues which the fracture itself has caused, very little further insult to the tissues is offered. On the other hand, if extensive open operation is performed there is always considerably more trauma to the tissue than that brought about by the fracture itself. Then there is a particular advantage in performing any operation through a fenestrated cast, and that is that there is very little possibility of losing position which has been obtained, while you will recall in your own experience that though when you closed the operative wound the fragments are in absolutely perfect alignment, yet after the splints or casts were applied and Roentgen examination made you were extremely disappointed in finding that the position had been lost through the handling in the application of the fixation apparatus.

In the use of plaster of Paris splints one must always take into consideration the possibilities and dangers connected with them. This is particularly true when it is necessary to immobilize the forearm as circulatory disturbance so frequently causes paralysis and sometimes gangrene with resulting amputation necessary, and careful supervision must be followed constantly whenever the forearm is splinted in any position whatsoever. The patient should be seen and examined closely at least once a day during the first few days. There should always be plenty of padding under the cast or splint so that there is no possibility of tight or restricted areas. The cast should always be cut out over bony prominences so as to prevent pressure. I particularly have reference to the prominence of the olecranon process or the back of the elbow. If any evidence of circulatory disturbance or unusual swelling, or constant pain, or blueness of the fingers, difficulty in moving the fingers, etc., occurs, the patient should without hesitation get in touch with his physician at once and if necessary the cast and padding split completely.

Lastly, let me say that the functional results of malunion are usually bad, therefore, it is highly essential to have good anatomical apposition and alignment of the fragments. It is a well recognized fact that if early reduction of these fractures is essential by the closed method, it is doubly true if the open reduction must be resorted to, therefore, one should not put off the reduction of a fracture day after day if he is not satisfied with the result he has. If operation is to attain the maximum result desired it is highly essential that it be performed within the first few days following the fracture as it is during this period that beginning bone formation is evident. If open operation is performed late there are greater possibilities for non-union or delayed union of the fragments which, of course, greatly complicates and interferes with the ultimate result to be obtained.

SUMMARY

(1) In the treatment of fractures of the upper extremity it is essential for success to understand the physiological and mechanical engineering problem that each fracture offers. (2) It is always essential that the controllable fragments be brought into alignment and apposition, and rotation with the uncontrollable. (3) It is usually essential to immobilize the joint above and below the site of fracture thereby increasing the stability of the fixation and accomplishing countertraction thereby. (4) The position in which the arm is held in relation to the uninjured portion and to the body is quite as important as the proper alignment of the fragments. Usually plaster of Paris splints are preferable to the ordinary commercial splints that are offered: (a) The splint can be molded to the exact position in which the arm is to be held. (b) Through fenestrated windows operative intervention, if necessary, can be accomplished. (c) When levers or removable, reduction or fixation devices are necessarily left between the fragments they can be readily imbedded into the body of the cast. (d) One who is familiar with the use of plaster of Paris does not find it necessary to keep a large stock of splints on hand. (5) If it is found impossible to bring about appositional alignment of the fragments by the closed method, open operation should be resorted to. (6) Active motion and physical therapy should begin early and carefully supervised in every instance.

NO INTESTINAL ANTISEPTIC.

There is really no such thing as an intestinal antiseptic, if that term is defined as equivalent to disinfectant, there being no known influence capable of killing the micro-organisms in the living intestine. If the term is defined to include inhibition of the growth and diminution in the number of intestinal microbes, then diet (milk diet in most adults) constitutes perhaps the most important influence of that kind. Mild mercurous chloride might qualify as an efficient drug with a tendency in this direction. Phenolsulphonates (sulphocarbolates) are worthless. (Jour. A. M. A., June 14, 1930, p. 1939).

MANAGEMENT OF HEAD INJURIES*

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Omaha, Nebr.

When I was asked to talk on the management of acute head injuries I accepted, not with the idea that I had something new to divulge, but rather thinking that what I might say would lead to an open discussion which would be valuable.

When a man has been catapulted from his demolished automobile or has jumped from the third story window of an apartment house the question quickly arises as to where he should be rushed. Should he be rushed to the operating room or should he be rushed to a warm bed? A successful solution of this problem will save many a workman for future activity. I speak of workmen advisedly, because it is unfortunately true that a great percentage of acute head injuries occur in males of the bread-earning age. For many years too many of these patients have been rushed to the operating room and even yet this is a predominant error in the management of acute head injuries.

I believe it is safe to say that the only persons with acute head injuries who should be taken immediately to the operating room are those with severe laceration of the scalp with open vessels, and those which beside the foregoing have a markedly depressed skull fracture. These cases should be thoroughly barbered, that is, the head completely shaven, the wound thorough scrubbed with sterile water and a sterile brush, this followed by alcohol, and the whole lacerated area filled and mopped out with iodine. If the pieces of dirt, glass, hat, hair, steel, and bone spicules are then picked out, the bleeding quickly controlled, and the scalp closed without drainage with interrupted silk and dermal sutures, the healing will be by primary intention in almost 100% of cases. Dependence upon an antiseptic without thorough laundry work as described many times results in long continued infected cases.

The group which should be rushed to bed, rather than to the operating room, comprises most of the cases of head injury. One member of this family which is frequently overlooked, frequently maltreated, and consequently frequently gives sequelae, is the man with concussion. This poor man frequently gets a slap on the back, congratulations on his great good luck in not being injured, and goes back to work. Later, when he is complaining of headache, irritability, dizziness, lack of concentrating power, and lowered physical stamina, he is construed either to be a "neuro" or that he has just naturally become worthless and does not like to work. His wife may even divorce him because of his altered disposition. If the members of the medical profession who are called to attend the man who has lost consciousness from the force of a blow on the head would seriously impress the necessity for immediate and prolonged bed rest, many of these distressing sequelae would be obviated. Three weeks in bed should be the minimum, for concussion means an actual brain injury.

The next group of acute head injuries which I wish to discuss is the more serious group which post mortem examinations on the fatal cases have shown to present multiple contusions and lacerations of the brain with cerebral edema and multiple small hemorrhages. This group may or may not have skull fracture, and allow me to say at this time that it is only rarely that skull fracture is of any moment. Why, then, are so many of this seriously injured group rushed to the x-ray room rather than to bed? The brain of such man has been sufficiently jostled to produce in most cases rather profound shock, and the shock picture presents itself for treatment. Who will say that an x-ray is essential in the proper management of shock! Cover this shocked patient with warm blankets, warm his clammy skin with hot water bottles, elevate the foot of the bed until the shock picture passes, raise that desperately low blood pressure with 50 or 100 cc of intravenous 25% glucose, give hypertonic magnesium sulphate per rectum, forget the x-ray pictures. and watch and pray. A fair percentage of this serious group who come in thus shocked, with profound coma, fixed, dilated pupils, and abolished reflexes, will promptly die despite our best efforts. If they survive this initial shock stage the picture gradually changes.

The stage of cerebral edema with compression supervenes. The skull is a tight box and as the enclosed brain becomes swollen and waterlogged, it becomes compressed, with resulting venous stasis and later arterial compression and cerebral anemia. More pressure is required to force the blood to the brain through the compressed vessels. The vascular system responds with an increased blood pressure and slow pulse. Added to these are unconsciousness or stupor, frequently extreme restlessness, with spasticity on both sides, increased reflexes and frequently bilateral Babinski's sign. Many times there is absolutely no focal or localizing sign, for the brain is somewhat uniformly swollen. A great variety of opinions have been voiced as to the most proficient mode of relief. Decompression has its devotees, spinal puncture its enthusiasts, and hypertonic solutions their zealots. The difficulty with decompression in these cases is that there is no particular area demanding decompression. The whole brain needs it and to me the small subtemporal decompression with its small bulge of brain tissue beneath the temporal muscles affords little relief to a diffusely swollen brain. If there were a hemorrhage to be controlled beneath the decompression its value would be multiplied.

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*Read before the annual meeting Nebraska State Medical Association, Lincoln, Nebraska, May 14, 1930.

In reviewing reports on the management of hundreds of acute brain injuries with compression and edema many writers are found to enthusiastically favor repeated spinal puncture. No one will deny its value as a diagnostic measure. A bloody fluid denotes a serious injury with laceration of the brain and hemorrhage. Its greatest value is in those cases in which the brain is bleeding into the spinal fluid. Puncture and withdrawal of this bloody fluid several times daily greatly relieves the intracranial pressure in these cases and may frequently be a life preserving measure. In cerebral edema alone, without hemorrhage its value is much less and is even doubtful. In these cases the spinal fluid will be clear.

Concomitant with spinal therapy the use of intravenous and rectal hypertonic solutions counteracts the cerebral edema and compression. There can be no question but that water is actually drawn from the brain by these hypertonic solutions. Many of us have seen a swollen brain actually diminish in size after a hypertonic solution has been given. A swollen brain bulging against the dura so greatly as to prevent incision in the dura will recede with the use of hypertonic solutions so as to allow unhampered incision in the dura. This has been noted many times and by many observers. Why, then, is it not one of our best therapeutic agents for the relief of the swollen, waterlogged brain in these cases of acute head trauma? Some observers feel that there is a reaction which develops later and which gives a secondary edema. This is probably true if one large dose be given. Repeated small doses seem to obviate this difficulty. I can recall several instances in which men with waterlogged brains and coma had completely roused inside one or two hours following the intravenous administration of hypertonic solutions. 100 cc of 15% sodium chloride given intravenously frequently gives spectacular results. These results are more temporary than the results following intravenus administration of 25% or 50% glucose solution in 50 to 100 cc amounts. The best hypertonic solution for rectal use is magnesium sulphate. It can be used orally, also during the stage wherein the patient has become sufficiently aroused to swallow, but still has considerable evidence of edema.

There are instances, of course, in which cerebral compression advances in spite of repeated spinal therapy and repeated intravenous and rectal therapy. The picture of medullary failure then approaches. Warning of this catastrophe is evidenced by the vacillating blood pressure and beginning irregularity with periods of rapidity of the pulse. A patient with cerebral edema, high pulse pressure, and slow pulse, who begins to show a wabbling pressure and intermittent faster pulse is in serious danger of approaching dissolution. If spinal drainage and intravenous therapy were used prior to this crisis, immediate subtemporal decompression under local anesthesia the only avenue of escape. It should not be postponed too long. Should the surgeon have the misfortune to procrastinate as this crisis approaches, until the temperature has ascended in sky rocket fashion with a corresponding rapidly ascending pulse, death is inevitable. Forestall this tragedy by decompression at the first vacillation in blood pressure and periodic running pulse.

But far more brilliant are the results of decompression in the cases of middle meningeal hemorrhage. These patients give a history of momentary unconsciousness followed by lucid interval. They are knocked out, quickly revive, and for a period of from a few minutes to several hours remain conscious and complain only of headache. Then gradually stupor intervenes, followed by coma. The side on which the meningeal hemorrhage has occurred is evidenced first by twitchings with exaggerated reflexes on the side opposite the hemorrhage. This is quickly followed by paralysis on the side opposite the hemorrhage. Striking results follow early decompression in these cases. One should not wait to try the effects of hypertonic salt solution or spinal therapy. Ligation of the artery with removal of the clot offer the only solution. These cases are frequently overlooked and treated as cerebral edema. This occurs for two reasons: First, the history of the lucid interval is not sought for nor obtained; secondly, repeated neurological examination is not carried out during the first few hours and the patient is not examined during the stage of one-sided irritability or paralysis. If one waits too long before doing a neurological examination or if they are not sufficiently frequently done both sides may be compressed by large one-sided hemorrhages with bilateral neurological findings and therefore no localizing signs.

I stated previously that skull fractures merely accompanied acute brain injuries and suggested that they were of major importance in comparatively few instances. Fractures of the vault per se should be ignored unless depressed or compounded. Fractures of the base have only one serious feature, namely, infection. Fractures of the base always produce some bleeding, because of the intimate connection of the dura with the bone. Those who bleed freely from the ears, nose, and mouth, have a better prognosis than those who do not. The reason is evident. The bleeding either remains within the skull producing cerebral compression with all its immediate and late consequences or escapes through the ears, nose and mouth. It may look ghastly but it affords very efficient cerebral decompression, and these patients do well. Meningitis results much less frequently if the ears, nose, and throat are not syringed nor plugged.

A few words concerning the treatment of the annoying sequelae, headache, may not be amiss. Weeks and months after recovery from all other symptoms, incapacitating headache taxes the ingenuity of the physician and the patience of the patient. Spinal puncture, with the withdrawal of 25 to 35 cc of fluid and the introduction of a slightly less quantity of air greatly relieves some of these patients. I have one at present under my care, who was immediately relieved by this procedure, although the headache had persisted for almost a year following her injury. The theory of the physiology of this procedure is that the introduced air becoming warmed by bodily contact, expands and thereby liberates dural and arachnoid adhesions. The theory may or may not be correct. The practice is at least worth a trial.

Perhaps the reason that skull fracture has assumed unwonted proportions is the medico-legal aspect of these cases. If the patient be a compensation case or if he be injured by a man with money or insurance, an x-ray picture showing a fracture is eagerly sought by the patient's lawyers and by the lawyers medical advisers. Thus a patient with a skull fracture and practically no brain injury receives more serious consideration than the man without fracture who was unconscious several hours from actual brain injury. The legal profession, the judiciary, the compensation commissioners, the insurance adjusters, and the jurors, should be taught that skull fracture per se requires small compensation and that compensation should be awarded on a basis of brain injury and its consequences.

THE MANAGEMENT OF OCULAR INJURIES

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In spite of the fact that the busy general practitioner has little time to give to ocular injuries, nevertheless there are times when he must take care of these emergencies, and not infrequently the final visual outcome depends on whether this preliminary treatment is adequate and correctly applied.

Not all ocular injuries are serious but they usually seem so to the patient, for example, traumatic subconjunctival hemorrhages usually clear up in a few days, and an emphysema of the conjunctiva following a fracture of the lacrimal bone subsides promptly, but the patient needs reassuring. A light dressing with cold compresses in the beginning followed by moist heat in the resolving stage is a comfort to the patient and hastens recovery.

Injuries to the lids and conjunctiva are usually rather easily managed. If the laceration is extensive, it may be necessary to excise considerable damaged tissue, but even so it is surprising how kindly nature will take care of the defect. If the upper lid is involved and the levator torn loose, effort should be made to reattach the muscle to the tarsal margin, and if the lid margins are lacerated the torn edges should be carefully approximated in making the repair. If there is a drooping of the lid (ptosis) without laceration, it is better not to attempt operative correction until all possible improvement by nonoperative measures has been accomplished, at least not for several months and it may be advisable to wait a year or so before resorting to operation.

Lacerations of the conjunctiva, unless quite extensive, frequently heal very well without suturing. If there is any question about it, fine silk sutures can usually be inserted under local anesthesia.

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In the case of wounds of the corneal epithelium, patients are apt to go to the other extreme and not give the condition sufficient attention. All epithelial abrasions, whether from scratches, burns or superficial foreign bodies, should be given close attention until healed, and the patient should be impressed with the fact that a very innocent looking scratch may easily result in the loss of the eye if it becomes infected. Frequent irrigations, hot fomentations and a light dressing are indicated in every case. If there is any infiltration of the wound-margin, or if there is congestion or photophobia, the wound should be cauterized with liquefied trichloracetic acid or iodine solution. The condition of the lacrimal sac should be investigated for chronic infection and, if this is found, the tear sac should be frequently irrigated. This is best accomplished by heating the point of an ordinary medicine dropper in an alcohol or gas flame, drawing it out to a fine point, which can be easily inserted into the punctum lacrimalis and the sac irrigated with boric solution. If the sac is infected and cannot be satisfactorily irrigated, it should be destroyed either by cauterization with trichloracetic acid as recommended by the late Dr. Harold Gifford or by excision.

Direct blows on the eye, often result in immediate loss of sight due to the anterior chamber filling with blood (hyphemia). Now this is alarming to the patient, but, as a rule, if the patient is kept quiet with both eyes bandaged the blood absorbs in a few days. The eye must be watched for evidences of secondary glaucoma, and drainage of the anterior chamber instituted if necessary. Should there be a recurrence of the hemorrhage, the use of hemostatics should be considered. While the patient is alarmed over the sudden loss of vision, the physician should be more deeply concerned over the possibility of a traumatic retinal detachment as the result of the blow on the eye. Treatment of detachments of this character would be rest in bed with both eyes bandaged. As the condition of the retina cannot be inspected due to the hyphemia it is advisable to keep both eyes bandaged for at least a week unless it can be determined sooner that the retina has not been disturbed.

Penetrating wounds of the cornea and sclera, whether there is a retained intraocular foreign body or not, are grave emergencies at best and prompt attention is necessary if the patient is to be given the chance for useful vision to which he is entitled. If the patient is to be referred to an oculist, a few drops of a 1% solution of mercurochrome should be instilled into the conjunctival sac, a moist boric acid dressing applied and both eyes bandaged to immobilize the injured eye.

If an oculist is not available or if the patient can not be referred, this does not relieve the family physician of responsibility. If there is no prolapse of iris or uveal tissue and if the wound is well approximated, the use of mercurochrome, atropine and a double bandage, with the general treatment to be mentioned later, may be all that is indicated. A shield made of pasteboard or other light but firm material (Figure I) as described by the late Harold Gifford, should be incorporated in the dressing to protect the eye from external pressure during the healing process.

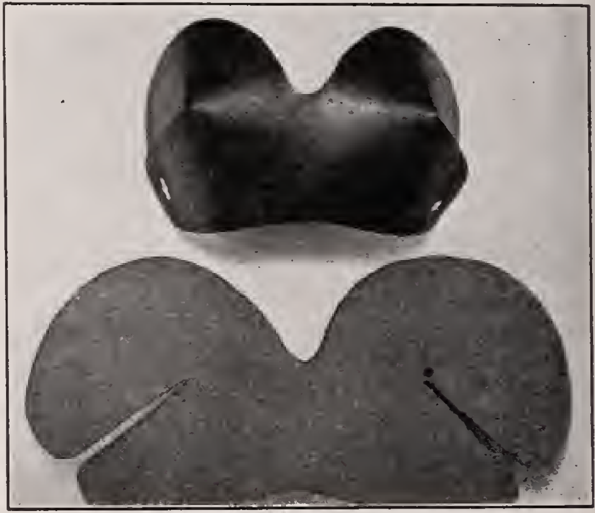

Figure I. a. Cardboard pattern for protective shield. This should be wide enough to reach from temple to temple and from brow to cheek 1½ inches below the eye.

b. Cut from cardboard or fiber board, bent to fit the shape of the patient's face and fastened with paper clips.

If there is a prolapse of iris tissue, it should be excised and the wound covered with a sliding flap. This can usually be done under local anesthesia. First prepare a conjunctival flap by making an incision through the conjunctiva as near the limbus as possible, including about half the circumference of the cornea with the wound approximately at the center of the curvature. The conjunctiva is then undermined back from the limbus to a distance of ¼ to ⅜ of an inch and sutures inserted (as shown in Figure II). The iris prolapse is then cauterized with trichloracetic acid, grasped with iris forceps and loosened from the margins of the wound, drawn out slightly and snipped off smoothly with iris scissors so that the remainder will retract in the anterior chamber. The margins of the wound are again cauterized with trichloracetic acid and the conjunctival flap drawn over the wound, simply by tying the sutures. When the stitches are removed after four or five days the conjunctival flap retracts to its normal position, having acted as a smooth firm asceptic dressing during the healing process.

If the wound does not coapt well or if there has been a loss of corneal tissue, then it may be advisable to secure a permanent adhesion of the conjunctiva to the surface of the wound as reinforcement. This can be accomplished by thoroughly cauterizing the wound margin and the adjacent cornea with liquefied trichloracetic acid, being sure that the corneal epithelium is thoroughly removed before applying the conjunctival flap. When this is done and a rather firm dressing applied, the conjunctiva will adhere to the abraded area. After a few weeks the adherent conjunctiva becomes atrophic, forming a smooth firm scar.

SLIDING CONJUNCTIVAL FLAP

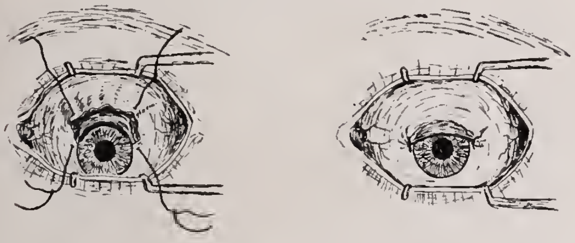
FIRST STAGE SECOND STAGE

Figure II. Showing undermining of adjacent conjunctiva and proper insertion of sutures and position of flap after sutures are tied.

If it is likely that there is a retained foreign body in the globe, especially if it is metallic in character, it is advisable to have an x-ray taken, not only to establish the diagnosis, but also to locate the exact position of the foreign body if it is there. This can be done by attaching two very small pieces of opaque substance to the conjunctiva as close to the cornea above and below as possible. A small bit of silver wire bent in "U" shape or a sliver of sheet lead clamped firmly on a silk suture and the needle passed through a little fold of the conjunctiva as close to the limbus as possible and the opaque substance tied down firmly to the conjunctiva, make excellent contact localizers and not only give the exact position of the eyeball at the moment the x-ray is taken, but also gives two fixed points from which the exact position of the foreign body can be determined. There are of course other more complicated methods of procedure, but this is a very simple practical method which gives the location of the foreign body. If the foreign body has passed completely through the eyeball and is lodged in the orbit as is not infrequently the case, it is shown by this method and relieves the physician and the patient of the necessity of an attempted magnet operation as the metallic substance will do no harm in the orbit. Non-metalic intraocular foreign bodies, e.g., bits of glass, wood, copper or lead shot are hard to remove, and if large or heavy (BB shot) usually require evisceration of the globe. Small bits of copper tend to work out through the sclera in some cases. Penetrating wounds through the ciliary region are thought to be more subject to secondary inflammation due to the vascularity of the tissues.

Much of our anxiety would be relieved in these emergency cases if we were sure that there was no infection in the intraocular structures. This is never the case as we can never be sure that the agent causing the penetration is sterile. so that all eyes so injured must be considered infected until proven otherwise by complete recovery. This is best accomplished by immediately putting the patient on full doses of sodium salicylate, administration of a foreign protein, (5-15 cc. of boiled milk or its equivalent, according to the age and weight of the patient) daily inunctions of mercury, free catharsis and rest in bed. If after three or four days a satisfactory view of the fundus can be obtained, and there is absolutely no evidence of intraocular infection, then this therapeutic program can be reduced in severity, but even then the prognosis must be guarded. I recall one case where an eye was lost from panophthalmitis which showed no evidence at all of intraocular infection for more than two weeks after the original injury.

If an injured eye is very slow in clearing or if it is subject to recurrent spells of inflammation on slight provocation such as exposure to wind, dust. intercurrent coryza, etc., the danger of sympathetic ophthalmia should be considered. This is a very insidious process and may have advanced considerably before the patient or physician realizes that anything serious has taken place. In some instances the patient will notice a slight congestion of the second eye or there may be some dimness of vision. When examined with the ophthalmoscope these sympathizing eyes may show a deposit on the posterior surface of the cornea, more or less indefinite retinal changes, and occasionally a slight blurring or haziness of the optic disc margin. The earliest signs are shown by the slit-lamp or biomicroscope as an increase of cells in the aqueous humor. As the condition advances there is marked inflammation and intense anterior uveitis not infrequently followed by firm posterior synechia and secondary glaucoma.

Sympathetic ophthalmia is a condition which should never be allowed to occur. Despite this fact we see several cases each year, indicating that stricter vigilance must be exercised in watching these injured eyes. Patients instinctively object to having an eye removed, and as physicians we are inclined to sympathize with them. However, it is much better to sacrifice an eye that is irritable even though it may have some vision, than to expose the patient to the risk of losing a useful uninjured eye. Of course every effort should be made to save an injured eye as we frequently see patients who are getting about very well following the loss of their good eye with one which for many years they had supposed to be useless. So that injured eyes should not be sacrificed without every effort being made to save them consistent with safety.

If the physician or oculist advises the removal of an injured eye and the patient refuses to follow his suggestion then the physician's opinion should be put in writing and signed by the patient, thus relieving him from further responsibility. Conditions of this sort are a fruitful source for damage suits and a signed statement of this character protects the physician.

Due to the general increase in the use of chemicals in commercial and household operations, a word in regard to the care of chemical burns of the eye is not out of place. Serious burns from battery acid, lime, ammonia cleaning powders, etc., occur frequently and adequate immediate emergency treatment is of the greatest importance. If you are called on the phone advise immediate profuse irrigation with water, getting it well under the lids, which should be held away from the globe while the irrigation is in process. If you are called to see the patient, the same treatment is indicated. The caustic action of practically all chemicals is weakened by the addition of water; and the profuse irrigation not only washes out the chemical which may be present but also weakens its action. After the irrigation the conjunctival sac and retro-trasal folds should be carefully inspected and any retained chemical such as bits of lime, etc., should be removed with forceps or a curette. An oil or mild ointment should be applied to the cornea and conjunctival surface and a moist dressing applied. The frequent applications of moist heat will hasten epithelial repair. A guarded prognosis should be given in every case of chemical burn as it is impossible to determine at the first examination as to just how deeply the tissues may be devitalized. Many an eye has been lost which at the first examination seemed to be but slightly injured.

A wound of the crystalline lens whether the result of a penetrating wound, a severe blow on the eye or a severe electric flash-burn, almost always result in the formation of a traumatic cataract. This ordinarily would not be looked upon as an emergency as the condition usually comes on rather gradually except in severe lacerations of the lens. In some instances the lens may absorb spontaneously and as a rule the matter of operation can be left more or less to the wishes of the patient. The exception to this is in case secondary glaucoma should develop. This may come on rather quickly following the injury due to a sudden swelling of the lens or it may appear as a late symptom due to unobserved synechia and interference with aqueous circulation. This is especially true with very young children as there may be but slight congestion and discomfort as the sclera of young children is rather elastic; an increased tension may be present without it being particularly noticeable on palpation. Occasionally a patient comes for a cataract operation only to find that the eye is totally blind from intercurrent secondary glaucoma.

This question of management of ocular injuries brings up the most important phase of treatment, namely prevention. Of course if a patient has two useful eyes he may feel justified in taking a chance, but if a patient has but one useful eye he should be urged to wear glasses constantly for the sake of protection. A properly fitted spectacle lens will prevent at least 90% of the accidents which cause injury to the eyeball and if the lens is made of high resistance or non-shattering glass, the percentage of protection is still farther increased. Even if the patient has two good eyes but is engaged in an occupation which is hazardous to the eyes, he should wear glasses or protecting goggles while at work. This applies particularly to machinists, carpenters, stone-masons, chemical workers and laboratory teachers and students. Prevention is better than the best of cures, and tactful advice, than a skillful operation.

"The practice of medicine is not a business, but a personal right, restricted to men whose good character and special qualifications have been ascertained and certified to after a long course of study and by license through a state board appointed for this duty. The right to practice medicine is a privilege earned by the individual and granted by the state for merit."

—C. B. Reed.

INJURIES TO THE THORAX*

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It is hardly necessary to go into great detail in the handling of this subject. Every physician appreciates that injuries to the thorax or the thoracic contents may be among the gravest as well as the most trivial of our traumatisms.

Also that the gravity of the injury is not dependent upon the apparent extent of injury.

The factors influencing the morbidity in any series of cases are shock, hemorrhage, and infection; with occasionally a case presenting pressure from an emphysema, which so limits the vital capacity of lung or heart that death is inevitable.

Probably in no other field of surgery is extreme conservatism so indicated, and watchful expectancy more to be depended upon.

All explorations for foreign bodies are absolutely contra-indicated except where the presence of a foreign body is by its presence directly dangerous to the life of the individual.

Massive crushing injuries of the chest, with extensive injuries to the bony thorax and the soft parts, are best treated, by the combating of shock which is always present, by repair of the soft parts, and by the application of a body cast as soon as the patient's condition will permit.

It hardly needs to be emphasized that a transfusion should be done wherever it seems indicated.

When hemorrhage occurs within the chest, if a great vessel is injured, the patient seldom reaches you, while in the cases of a slowly progressive and threatening hemorrhage, if the condition of the patient permits and the vessel is accessible, then the bleeding point may be approached and tied.

Puncture and aspiration in simple hemothorax are absolutely contra-indicated. If the hemothorax is too slowly absorbed, and it is felt that aspiration will be of benefit, wait as long as possible and then puncture under the strictest of aseptic precautions.

The dangers of early aspiration in hemothorax are; first, inducing a recurrent hemorrhage; second, the induction of an infection from without, or if the penetration of the lung or bronchus has occurred, the induction of an aspiration empyema.

It must be remembered that a hemothorax is one of the best of hemostats available, however, in spite of the danger of infection, in a hemothorax with increasing pressure, it is permissible to aspirate, but the indication must be absolute and not too much blood must be aspirated.

Lung abscess, persistent bronchial fistulae, and chronic empyema, may occur as late results of a chest injury, these are "after-conditions" and have no place in this paper.

Empyema occurs in but few perforating injuries of the chest. Its treatment is that of any other empyema with this exception—you may have to do with a free foreign body which keeps up the empyema.

The removal of the foreign body should not be undertaken early in the course of the empyema.

Prolapse of the lung may occur immediately following the traumatism, or late in the case—in this latter instance there has been a loss of considerable of the thoracic wall.

The treatment suggests itself in each of these conditions.

Beside the injuries to the chest wall, the vessels of the wall, and the lung and its vessels—we have another class of injuries, those of the heart or the great vessels.

In any considerable injury to the heart or the great vessels, the patient almost immediately succumbs to his injury, while if he is still living when he reaches you, the probabilities are that he will require nothing but rest and quiet, even if the heart has been injured or penetrated.

A hemopericardium which does not embarrass the heart and which you feel is not increasing, is best left alone. Do not aspirate. If the case is too threatening, open the pericardium and repair your injury if possible.

Injuries to nerves, the greater bronchi, and to the aesophagus, are inaccessible surgically in acute traumatisms.

If the partient survives, the complications can be met as they arise, and abscesses may be drained wherever they may be.

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Rupture of the diaphragm occurs in a certain number of chest injuries—this should be repaired as soon as the patient's condition permits.

A phrenecotomy should be done on the affected side and the rent in the diaphragm served from an abdominal approach.

In cases of unilateral crushing chest injury where more immobilization is indicated than can be obtained by mechanical means, a phrenecotomy should be performed on the injured side.

However the phrenic nerve should be only cut or crushed. It is never necessary to remove a portion of the nerve.

In chest injuries an accurate diagnosis is necessary, and it must be remembered that many an apparent chest injury is simulated by some injury to an abdominal viscus, and that the abdominal cavity extends well within the chest to the nipple-line.

It must be again emphasized that in injuries of the chest, too little surgery is safer than too much surgery.

That active, persistent and alarming hemorrhage should be controlled.

That simple aspiration is seldom required in hemothorax, or hemopericardium, and if performed, should be done under the strictest of aseptic precautions, and with the knowledge of its potential dangers.

That no wound should be probed, or explored, or packed with gauze.

That transfusions are indicated early in the injury.

That rest and immobilization play a major role in the treatment of severe thoracic traumatisms.

Meet your emergency with careful judgment, and meet your complications as they arise.

MUSCLE AND NERVE INJURIES*

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Injury to soft parts without injury to bone rarely gives rise to complete inability to use an extremity. Hence the patient is advised to continue active use in spite of pain, which should be regarded as a symptom demanding rest. Function within the limits of discomfort is permissible, but very active use is certainly not conducive to recovery. An athlete with a "charley horse" is permitted by the trainer, very light work outs with special instructions against re-pulling his muscle. Rupture of muscle fibers is accompanied by hemorrhage, healing takes place by scar tissue formation: the degree of recovery is in inverse proportion to the extent of the scar. Repeated injuries of this type handicap seriously an otherwise promising athlete.

Muscle and ligament tear occurring in the heavy muscles of the back heal by scar tissue formation. Scar tissue is less resistant to subsequent injury and scar tissue is also tender until complete fibrosis has occurred. Recurrent back sprains is the rule rather than the exception. After one injury of this type, others are received with progressively less violence. Add to this, the low grade infectious myositis and there is the illusive but ever present problem of the chronic back strain.

Tear of muscle usually occurs at the beginning of the aponeuritic insertions in long bellied muscles with great leverage. The minor tears cannot be well localized. Major tears are described more as rupture of tendons. Rupture of the long head of the biceps offers a clinical picture varying with the degree of the tear. There is a sudden, sharp pain under lifting strain, followed by local swelling, loss of normal contour in the upper curve of the biceps and later the muscle may become digastric. Flexion power of the biceps at the elbow is only partly lost. Rupture of the quadriceps femoris occurs in the supra patellar portion and usually the lateral expansions of the vastus internus and externus remain intact. This is in direct contrast to the picture of a fracture of the patella which is always accompanied by serious laceration of the lateral aponeuroses.

A distinct clinical entity is presented by the history and clinical findings when rupture of the plantaris muscle occurs. The plantaris muscle is a minor accessory to the gastrocnemius from which it is independent both as to the belly of the muscle and its tendon. Its function is synergistic; its anatomy is individual. Rupture of this muscle may occur as a result of unrecognized strain in the plantar foot flexion such as jumping or climbing a hill. Pain is severe, sudden in onset and described as that of being hit on the back of the leg by a golf ball or rock. Swelling is slight, disability in ordinary walking is slight. Hemorrhage occurs at once but becomes evident not before 48 hours when the ecchymosis appears in the region of the tendo achilles. Disability of minor degree persists for 4 to 6 weeks. No recognized permanent disability persists except as decreased "spring power" in jumping athletics. This is the usual "pulled heel tendon" in college athletes.

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Severe contusions of muscle result in a very similar clinical picture. Severe contusion to tendons gives rise to a tenosynovitis which in the absence of moderate active motion will terminate in an adhesive tenosynovitis with great restriction in both power and range of motion in the particular group of individual muscle.

Penetrating wounds involving muscle alone rarely give indications for surgical repair. There is always local hemorrhage of varying degree. If the hematoma be great, wider incision of the external wound or better through a cleaner area, will decrease the size of the blood clot and result in far less scar tissue replacement. Adhesions of the muscle belly to the overlying and gliding aponeurosis gives rise to a decreased muscle strength and earlier onset of muscle fatigue from the irritation of the muscle functioning with its "brakes set". This is especially true of the muscles having to do with the fine and more rapid finger movements.

Penetrating wounds as from a knife blade or sharp glass fragments, may involve the underlying structures in a manner far more serious than anticipated on preliminary examination. The fine stilleto in the praecordial region makes only a minor skin lesion, but the cardiac muscle damage too often brings about the intended result. Immediate and painstaking examination of the function of muscle, tendon and nerve is just as important as the more dramatic and often only treatment directed toward control of the hemorrhage. The compression dressing too many times makes impossible the early examination for disturbed function.

Incised wounds are as often clean as infected. The out flowing blood mechanically tends to prevent infection. Infection occurs too frequently as the result of the primary or secondary dressings which are not done with aseptic technic. Immediate suture of the integument is not permissible without adequate assurance there is no damage to essential deep structures. Deep exploration of the wound is less valuable and far more dangerous than the external but careful determination of the motor and sensory changes in the structures distal to the wound. Probing of the wound, immediate insertion of hemostats and application of ligatures for hemostasis can better be supplanted by local compression dressings and elevation of the part; or if the hemorrhage be severe, control is better obtained by the tourniquet applied with due regard as to whether the bleeding be venous or arterial.

In the incised wounds complicated by injury to tendon or nerve, exploration or repair should not be considered until the conditions for work are under the doctor's control. There are few injuries which cannot now be transported to proper facilities within an hour or two.

The severely contused and lacerated wounds or the mangling wounds present the same problems as related above; but in addition, demand the finer judgment of what damaged tissues may be anticipated to survive. The over-enthusiastic and extensive "debridement" of war-time surgery can be toned down considerably and still meet the demands of the peace-time injuries. There is available more time for the determination of viability of damaged tissue.

Under proper working conditions, i. e., controlled aseptic technic, adequate assistants, instruments and proper suture material, immediate repair of interrupted tendons and nerves gives a better chance for successful outcome than does the late repair. For most surgeons a chart of the anatomy to be repaired, if visually available, will not only remove uncertainty but will expediate the operation. Nor should the presence of a book be regarded so much an admission of forgetfulness but more as a proof of the doctors knowledge that no human brain can retain all the details of the human mechanism.

The field of operation should be clear. When clouded with blood, severed tendons and nerves are not readily differentiated. Hemostasis by tourniquet well above the lesion is essential technic. Tendon and nerve ends retract rapidly. In incised wounds, adequate exposure is necessary and the added incisions should be so planned to give as little chance as possible for later adhesions. Identification of corresponding proximal and distal ends before repair is attempted. End to end suture avoids much later difficulty in smoothness of moving tendons. In the transected nerve particular care is needed in avoiding rotary distortion. Each nerve presents a characteristic cross section pattern and these corresponding surfaces must be apposed to give the best chance for regeneration. Care, too, must be exercised to avoid further injury to nerve fibers by placing the sutures more deeply than the nerve sheath. The late repair of tendon and nerve injury is complicated by factors other than the severed structures. These complications are often more serious than the original injury. When a tendon is severed the normal contractility of the muscle causes the muscle to shorten; this shortening if prolonged beyond two weeks develops into muscle contracture and there follows rapidly a fibrosing myositis from which recovery is rarely complete. Obliteration of the unoccupied tendon sheath takes place. So there becomes necessary plastic restoration of both tendon length and tendon sheath. The unopposed muscle groups, if preventive splinting be neglected, also but more slowly, go into a state of contracture with fibrous tissue replacement. The joint capsules and ligaments become structurally short. Restoration of normal position of the extremity then becomes very difficult and restoration of function quite problematical.

Where there be nerve injury, these same pathologic processes occur in the shortened muscles, with fatty degenerative changes in the overstretched muscles. Recovery from these pathologic changes is brought about incompletely by long and persistent local therapy in the form of heat, massage and electrical stimulation. The anesthetic areas are always prone to ulceration due to their diminished resistance to even mildly harmful external stimuli. Trophic ulcerations are most indolent and present little resistance to secondary infections. Particular protection should be afforded these extremities of absent or diminished sensibility.

These generalizations have been made to apply to soft part injuries independent of trauma to bone. In consideration of fractures, little attention is directed to the complicating damage to muscle, tendon, ligament and nerve. This attitude of mind accounts for the usual late diagnosis of tendon and nerve injury. It is a growing opinion that more adequate therapy to these traumatized soft parts will materially decrease the disabilities consequent to fractures.

The present day intensive specialization in medicine and surgery does not permit the specialist to stop being primarily a doctor of medicine. There must go with his specialization, that breadth of vision and acuity of observation together with the high regard for the general practitioner and consideration of other special workers, which permits him to realize the necessity at times for consultations in the problem cases such as are under discussion. These muscle and nerve injuries demand the combined judgment and activities of the neurologist, the neurologic surgeon and the orthopaedic surgeon.

TRAUMATIC LESIONS OF THE ABDOMEN*

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Intra-abdominal lesions from external trauma, without injury to the abdominal wall are always of great interest to the medical profession.

With stab wounds it is of value to know the length of instrument, the relative positions of victim and assailant, and the direction in which the instrument was thrust.

With gunshot wounds the size of the bullet is of value. Small bullets, traveling with great velocity, do far less damage than larger and more explosive ones. Small missels cause wounds of the hollow viscera as well as those of larger size.

In the case of subcutaneous injury, we can divide them into; those in which there is only a slight abrasion or contusion externally, and the graver cases in which there is a hernial protrusion.

The modes of injury are chiefly of 3 varieties:

1. A circumscribed force or one which has come in contact with the abdomen over a limited area only. Kicks or a fall upon some object, or a blow from a tool, like a hammer.

2. A diffuse force or one in which one segment or the entire abdomen has been compressed between two opposing forces, caught between buffers of or between the steering wheel of car or seat.

3. An indirect mode of injury, as a fall upon the feet.

There are 4 classes of cases:

1. Those with marked primary shock symptoms from which the patient never recovers, death occurring in a short time after the injury.

2. Those with marked primary shock symptoms passing imperceptibly into those of internal hemorrhage, either terminating fatally within a few minutes or hours or with signs of internal hemorrhage continuing so that a diagnosis of injury to a viscus with escape of blood can be made.

3. Cases with practically no general symptoms and in which the suspicion of an abdominal injury only arises from the history or the mode of injury or the gradual signs indicating hemorrhage or beginning peritonitis. There are also cases in which the symp-

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toms appear late at the tenth day from dislodgement of a clot.

4. Cases in which there is apparently considerable primary shock which clears up without any local injury being discovered.

Examination of patient:

General condition of patient: Shock, expression, position.

In making an examination of the general condition of the patient, note whether symptoms of shock are present or absent. In case they are present and persist for more than a few hours, one must look for local and internal signs of injury.

Extreme pallor, a weak rapid pulse with but little tension, thirst, restlessness, shallow respiration and a low blood-pressure, indicate internal hemorrhage.

These cases are hard to distinguish from shock except by the absence of unconsciousness, of cold clammy skin and pupil dilated in hemorrhage. There are cases in which symptoms of both shock and hemorrhage appear immediately after the accident, so that it is hard to distinguish between them until several hours later, when the hemorrhage symptoms predominate.

If the condition is due to hemorrhage, the patient becomes paler, more apathetic and somnolent, the pulse gets smaller and more rapid and respiration shallower. We may have an intraperitoneal hemorrhage in which pallor is not marked.

The most important local signs aside from those to be seen or felt externally in their first six to twelve hours are:

1. Muscular rigidity.
2. Localized or diffuse pain and tenderness on pressure.
3. Dullness in flanks or above the pubes.

The muscular rigidity is the reflex contraction of the abdominal muscles and one of the earliest symptoms, usually more marked over the injured viscus. These symptoms are due primarily to two things: Peritoneal irritation from presence of blood, or irritation due to escape of bowel contents or urine.

The steady increase in pulse rate and tympanites with the onset of vomiting soon indicate the presence of a complicating peritonitis. If pain is due to the injury of the abdominal wall, alone, muscular rigidity is never marked.

In the absence of signs of shock or internal hemorrhage in the early hours after an injury one may detect dullness in the flanks or above the pubes. Such dullness, if it changes to tympany when the patient is turned on the opposite side, means free blood or urine in the abdominal cavity. If the dullness is only above the pubes and does not vary with change of position, it is due to an extraperitoneal rupture of the bladder. It is usually difficult to demonstrate free fluid early, because of muscular rigidity.

Symptoms of injury of particular viscera:

1. Cases where symptoms of injury to the alimentary canal predominate.
2. Those in which symptoms of injury to urinary organs predominate.
3. Those in which signs of internal hemorrhage predominate.

Alimentary canal: Nausea, vomiting continuing for some hours after injury. If blood is mixed with vomitus, probably a stomach injury is present. If the vomiting is bilious in character, a wound of small intestine should be suspected.

Obliteration of liver dullness: If present in the form of tympany replacing a normal liver dullness is an important sign.

The presence of free fluid in sufficient quantity to permit of its detection by percussion, is so rare in the early hours of a stomach or intestinal injury, as to be of little value. If you can find a changing line of dullness in the flanks and above the pubes, it indicates a visceral perforation. One must exclude the possibility of intestinal coils full of fluid faeces and also free hemorrhage.

The most important signs are gradual rise in pulse rate and increased w. b. c., provided one can rule out hemorrhage and primary shock.

Tympanites: A gradual increase in distention of the abdomen and other symptoms, such as inability to pass flatus, one would suspect perforation.

When the tympanites is marked, its value as a diagnostic sign is of little value from an operative standpoint, since septic paresis of intestine is well marked. The passage of blood with bowel movement should make one suspect intestinal injury. Pain, tenderness and rigidity of the abdominal wall are often quite localized in gastric or intestinal injury.

Symptoms of injury of the urinary organs:

Injury of the kidney: If the wound in the kidney communicates freely with the general peritoneal cavity it produces the same symptoms of internal hemorrhage as those in which there is perforations of solid viscera like liver and spleen.

Most charactertistic symptoms are hematuria with tenderness and swelling over the kidney, and lumbar region. Pain may radiate along the ureter into the testis or thigh upon the side of the injury with rigid lumbar muscles. The hematuria is usually marked just after the injury and gradually diminishes in quantity. There may be severe laceration of kidney with no hematuria, if the ureter becomes blocked.

With injuries of the bladder, the history and location of the injury is important, as fracture of pubes causing puncture of bladder. Usually there is pain over the bladder, urine scanty and bloody, and a constant desire but inability to urinate. The injury to the bladder may be extra or intraperitoneal.

Cases in which symptoms of internal hemorrhage predominate:

These will be cases, rupture of liver, spleen, intraperitoneal rupture of kidney.

Icterus, when present, is a late sign and of value, indicating an injury of the liver. The presence of free blood in the peritoneal cavity, whether due to an injury of the omentum or mesentery or spleen, liver or kidney, causes symptoms of peritoneal irritation early.

Fracture of the lower ribs often causes injury to liver and spleen. The signs of peritoneal irritation from free blood in peritoneal cavity are similar to beginning peritonitis, but are less rapid in onset. They consist of gradually increasing pulse rate, tympanities and leukocytosis. These gradually subside if the blood remains septic and is absorbed.

A brief history of personal cases, illustrating some of the symptoms mentioned under slight, if any, visable injury to the abdominal wall, but with severe injury to the abdominal organs.

Rupture of the uterus, torn mesentery of ileum and destruction of a part of the right rectus muscle of abdomen.

Mrs. J., white, age 28, pregnant 8 months. While leaning out of the window pulling clothes line, fell a distance of 20 feet, striking a post in her fall. She was taken back into her home, a physician called, who sent her to the hospital some 2 hours after the accident.

On admission, woman conscious, temperature 97, pulse 130, respiration 25, pale, skin cold, respiration shallow, complaining of severe general abdominal pain.

Examination of abdomen: A large discolored area over right rectus, wide separation of right rectus. Palpatation through this split in rectus disclosed a fetus apparently free in the abdominal cavity. Under local anaesthesia with a little gas, an incision made through right rectus. On opening the peritoneum the abdomen was filled with blood, fetus free in abdominal cavity, a ragged tear in fundus of uterus filled with firm clot. The fetus extracted, ragged margins of uterus freshened and sutured. Some 16 inches of ileum had the mesentery stripped off, so there was no blood supply to this portion of the intestine. This loop was brought out on the abdomen, sutured to skin margin, a dressing applied, abdomen closed, treated for shock. At the end of 48 hours the loop of intestine was removed with cautery close to skin margin and fecal fistula established. The discharge from the small intestine caused a severe excoriation of the surrounding skin. A month after the accident, her condition warranted an attempt to close the fistula, which was done by an end to end anastomosis. She made a good recovery.

Torn mesentery of the sigmoid and of great omentum, retroperitoneal hemorrhage and hematuria, all following an auto accident.

Male, age 45, white, drove his car into a fallen tree along the highway. His abdomen was squeezed between the steering wheel and seat of the car. Brought to the hospital half an hour after the accident.

Conscious, complaining of severe general abdominal pain, shock, skin cold, pulse 120, respiration difficult and painful. No external evidence of injury. Treated for shock, examination disclosed fracture of 4 ribs on left side. Entire abdomen tender and rigid, passed bloody urine. Observed record of pulse every half hour. At the end of 2 hours, pulse had gone up to 140, abdomen more rigid, complained of more pain, advised operation.

Operation: Midline incision, free blood in peritoneal cavity. Considerable oozing from torn omentum, ligated. Tear in mesentery of sigmoid, sutured and hemorrhage stopped. A large collection in left retroperitoneal space in kidney region. The tear in sigmoid extended to mucous coat, but not through this, as sutured. Large drain inserted. Following a stormy convalescence, he recovered. His hematuria gradually decreased and at the end of a week the urine was normal.

Intraperitoneal rupture of bladder, following auto accident.

Boy, age 10, wheel of auto passed over abdomen; examination half hour after accident. Except for general abdominal pain, child complained very little.

Examination 2 hours after injury: tender over pubis, abdomen slightly rigid, a little distended. On inserting a small cathether, a small amount of bloody urine was obtained. Operation advised. Rupture of dome of bladder found, sutured with Lembert suture and drain inserted, into the space of Retzius. Retention cathether inserted in bladder, good recovery.

Gunshot wound of ascending colon and caecum.

Male, age 24, a charge from a shot gun was fired by a maniac from a distance of 20 feet. The small shot entering the right side of lateral chest also right side of abdomen. Case sent to hospital and examination half hour after injury.

A great number of small punctate wounds of soft parts, right side of abdomen, right lateral aspect of abdomen. Temperature and pulse normal. Except for a burning sensation of small punctured wounds, patient complained very little. Nurse advised to take pulse every half hour, watch rigidity of abdomen. Two hours after the injury, pulse gradually rose to 120, right rectus rigid, patient complaining of general abdominal pain. Right side of abdomen a little distended. Operation advised. Midline incision, free blood in peritoneal cavity. Escape of gas and small amount of feces on lifting up ascending colon. 8 perforations of ascending colon and 3 of caecum found; closed with linen, free drainage inserted. Patient had a very stormy convalescence, had to have very frequent stomach lavage, because of regurgitating fluids back into stomach. Nerve irritation and pain in right leg, numerous shot imbedded in lower spine. Dr. Orr, orthopoedic treatment. Recovery.

Rupture of large bowel from forcing of air into rectum. Death.

Boy, age 9, held by several playmates and at a tire station, the nozzle of air pressure hose pushed into the rectum and air forced into the rectum. Saw case with Dr. Doan. Entire abdomen distended, skin of entire body discolored, emphysema of entire chest wall extending into neck. Patient moribund and died half hour after accident.

Brief discussion of cases:

Steel brake bar entering rectum, causing rupture of ileum. Operation. Death.

Traumatic rupture (intraperitoneal) bladder. Two cases. Operations. Deaths.

Trauma of abdomen, auto accident, with symptoms of internal hemorrhage. Operation, no internal injury found. Recovery.

Fall on steel rail, rupture right kidney, nephrectomy. Recovery.

THE MANAGEMENT OF INJURIES OF THE HIP IN THE AGED

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Fractures of the upper end of the femur frequently present rather difficult problems due to age, poor physical condition, lack of cooperation, etc. In public institutions, where any and every type of patient is cared for, these problems are often amplified. It has been my privilege to study the management of such cases at the Douglas County Hospital.

Fractures of the upper end of the femur have received a great deal of prominence in late years, especially since Royal Whitman devised his very satisfactory method of treatment for such cases. Within the last three years, 27 cases of fracture of the upper end of the femur have been treated at the Douglas County Hospital and every type of fracture was demonstrated.

It is interesting to note the various ways in which such injuries have been classified. Sir Astley Cooper(1) is credited with the first tabulation of fractures of the upper end of the femur; he divided them as follows:

1. Intracapsular fractures which occur in elderly people between 50 and 80 years of age.
2. Extracapsular fractures at the junction of the neck and greater trochanter which occur in young people.
3. Fractures through the trochanter which occur at every period of life.

Cotton(2) contends that there are but two classes, "usually confused, utterly different in practice and in results—the extra capsular which cannot be kept from accomplishing some sort of bony union by any treatment or lack of treatment—and the intracapsular breaks which give nearly all the trouble and average very badly by return of function."

While such a classification is important from the standpoint of treatment in some respects, it by no means gives a clear description of the fractures dealt with in all cases. A more detailed classification is furnished by Higgs(3) which is identical to that of Kocher's division:

1. Subcapital fractures.
2. Transcervical fractures.
3. Inter-trochanteric fractures.
4. Pertrochanteric fractures.
5. Sub-trochanteric fractures.

The first two form a group by themselves as they have definite characteristics. They are fractures of the neck proper, therefore always passing into the joint. They occur most frequently in elderly people as the result of indirect violence; but no age is exempt. They are more frequent in men than in women. The line of fracture is usually transversely across the neck and not comminuted, occasionally impacted, but not often so, and then loosely. Shortening of the leg is not great and reduction by manipulation is fairly easy. They are difficult and slow to knit. A painful pseudo-arthrosis is a common sequel.

The remaining types fall into a second group and have common characteristics. They may involve the neck but only at the base. They are usually the result of direct violence and are found in younger people. Comminution is the rule and impaction common. Shortening of the limb is usually more than in the previous group and, owing to frequent firm impaction, reduction by manipulation is difficult. Firm bony union is the rule. any residual deformity or disability being due to shortening or secondary coxa vara.

Stebbing[(1)] gives a more workable classification and is the one which I have adopted. namely:

1. Fracture through the neck of the femur.
2. Fracture through the great trochanter.
3. Sub-trochanteric fractures.

According to this grouping, the series of cases presented here are as follows:

SEX	NECK	INTER-TROCHANTERIC	SUB-TROCHANTERIC	TOTAL
Women	5	1	0	6
Men	9	8	4	21
Total	14	9	4	27

While this series is comparatively small and it is possible that a much larger number of case reports would alter the percentages above, it is in direct contrast to the group of cases reported by Stebbing. Of a total of 342 cases, 111 were fractures through the neck, 207 through the trochanters and 23 subtrochanteric.

Kail[(4)] collected a series of 130 fractured hips wherein fractures through the neck occurred in 17 per cent of the males and 41 per cent of the females. Intertrochanteric fractures constituted the remainder. The ages in this group ranged from 47 to 92 years of age.

In a series of 264 cases presented by Lofberg[(5)], 172 were intracapsular, thus fractures of the neck of the femur. This report compares more favorably with this series, showing a preponderance of fractures of the neck over those of the trochanters. Nevertheless it seems to be the consensus of opinion that pertrochanteric fractures are more common than those of the neck.

The mechanism of injury for fractures of the hip varies as to the fracture produced. For fractures through the neck of the femur, the type of injury is the same in practically all cases. The patient trips over a small object and falls to the floor; slips and falls, etc. Stebbing states that in each case the force producing the injury is an axial torsion of the lower limb and the bone breaks at its weakest point, i. e., the neck.

As a result of experiments on cadavers, Shaw[(6)] concludes that fractures of the narrow part of the neck are due to an axial twist of the femur—indirect violence and that fractures of the broad part of the neck and inter-trochanteric fractures are due to direct violence.

Of the 14 fractures of the neck of the femur reported here, nine were the result of a slight fall, as to the floor, etc., two from automobile accidents and three from a manner of injury unknown. Five of the cases were women and all sustained a slight fall, either to the floor or pavement.

Fractures through the trochanters are generally considered to be the result of indirect violence which thrusts the head of the femur downwards while the limb is adducted and rotated outwards, tending to lessen the angle the neck makes with the shaft. This view is contradicted by Shaw who believes that intertrochanteric fractures are due to direct violence over the trochanter or to outward leverage of the shaft when the head and trochanter are fixed, and cites experimental and clinical evidence to prove his point.

In this series the intertrochanteric fractures were produced as follows:

Direct violence:	Fell down elevator shaft Auto accidents Hit by horse Fell down flight of steps	6
Unknown		1
Fell to floor		3
Total		10

This grouping shows a strong preponderance of evidence toward the belief that direct violence. such as being struck by an automobile, horse, or a hard fall, is chiefly responsible for intertrochanteric fractures.

Subtrochanteric fractures are really fractures of the shaft, yet are sufficiently close to the hip to be classed as hip injuries. There are two such cases in this series; the manner or injury was unknown in one and an automobile accident was responsible for the other. Such fractures are unquestionably the result of direct violence.

The methods of treatment devised for fracture of the upper end of the femur are numerous, chief of which are:

1. Buck's extension alone, or with Liston's, Thomas or Hodgen Splint.
2. Combined longitudinal and lateral traction—Maxwell-Ruth method.
3. Abduction and fixation in plaster—Whitman method.
4. Operative treatment; bone graft, bone pegs, arthrotomy with freshening of fracture surfaces, Brackett's operation, Cotton's operation, Whitman reconstruction operation, etc.

Extension alone or with the aid of one of the above mentioned splints is generally unsatisfactory. It may tend to correct overriding of parts but in no way does it tend to immobilize the distal fragment in abduction and internal rotation. If the fracture is firmly impacted, this method might achieve a good result.

Combined longitudinal and lateral traction is based on more sound principles. Under anesthesia the fracture is reduced by manipulation and then maintained in position by a powerful longitudinal pull and a lateral traction outwards, upwards and forwards. This method can hardly be of general application as it requires a high degree of skill in application and adjustment of extension and constant vigilance on the part of those in charge of the case.

Whitman's method is based on sound surgical and anatomical principles. It fulfills the theoretical requirements in a manner that no other method can approach for simplicity and efficiency. Extension with abduction and internal rotation reduce the deformity and bring the bony surfaces into contact. Current literature is full of case reports of satisfactory results where this method was used either in fractures of the neck or of the intertrochanteric type.

The treatment generally used in this series of cases is that devised by Royal Whitman. In all cases except two where the Whitman method was used, the patient recovered and obtained a good serviceable hip. One exception was a case treated by extension, Hodgen and Thomas splint 54 days because of the extremely poor general condition of the patient. The patient died 28 days after application of the plaster cast.

Operative procedures were induced in one case only and this was on the subtrochanteric type of fracture where every known means of non-operative treatment failed to approximate the fracture ends. Under spinal anesthesia Dr. J. E. Summers was able to reduce the overriding and approximated the fragments. This was done with extreme difficulty and it was necessary to sever part of the muscle attachments of the greater trochanter to permit reduction. The fragments were held by Lane plate and screws; the hip was fixed in good position by a plaster spica cast but due to uncooperativeness on the part of the patient, the cast cracked at the hip before it had sufficiently hardened. The proximal fragment of the fractured femur was torn away from the Lane plate fastenings, permitting, in a large measure, the former degree of overriding. The proximal end of the Lane plate was thrust through the incision and was removed. A fresh cast was applied with the fragments in as good position as possible. This, the patient permitted to become soiled so that it was necessary to remove it within a short time. The limb was then fixed in a wooden box splint and the patient placed on a Bradford frame. Within a short time, callus formation took place, the splint was removed and the patient allowed up. He has developed a fair range of motion at the present time.

Various operative methods have been devised to overcome the difficulty of fixation in fractures of the femoral neck. The oldest is the insertion of nails or screws. Good results have been recorded, but the objections far outweigh the merits of the procedure(3). There is the initial difficulty of accurate insertion, which, even if performed under the x-rays may cause much damage to the bone and sometimes to the joint surfaces. The soft cancellous tissue of the detached head gives a poor grip to a nail or screw and thus fixation will soon become even less secure through the process of rarefying osteitis set up by the presence of a foreign body. Against this method is the objection that the graft is introduced blindly and, therefore, accurate placing cannot be assured and damage to the joint may occur. For this reason some surgeons advocate arthrotomy of the hip-joint and inspection of the fracture, followed by the introduction of a fibular or tibial graft. This is necessarily a more prolonged and severe operation.

The mortality and morbidity statistics for the group of cases reported here are as follows:

Average age, 68 years.

Average age, men, 68 years, maximum 85, minimum, 38.

Average age, women 68 years, maximum 56, minimum 89.

General Mortality, 42.3 per cent.

General Mortality, men, eight cases, 38 per cent.

General Mortality, women, three cases, 50 per cent.

Cases treated by the Whitman method, 15; deaths 2, 13.3 per cent.

Cases not treated by Whitman method, 12; deaths 9, 75 per cent.

Fractures of the Neck of the femur:

Men, nine cases, two deaths, motality 22.2 per cent.

Women, five cases, three deaths, mortality 60 per cent.

Eight cases casted, none died.

Fracture of the femur, pertrochanteric:

Men, 10 cases, 4 deaths, mortality, 40 per cent.

Women, 1 case, no deaths.

Seven cases casted, one died.

Subtrochanteric fractures of the femur:

Men, 2 cases, 1 died, mortality 50 per cent.

Women, no cases.

One case casted; died.

Fractures of upper end of femur; Age Groups—in Years:

Age in Years	30-40	40-50	50-60	60-70	70-80	80-90
Number Cases	1	0	4	7	11	2
Number Deaths	0	0	1	2	5	2
Per cent Deaths....	0	0	25	28.5	45.5	100

From the information thus obtained from the above tabulations it is quite evident that the Whitman method treatment offers the most comfortable type of dressing when applied properly and that the chances for the patient's recovery are greatly increased whether the fracture is of the neck or through the trochanters.

The statistics here may be misleading if one other factor is omitted, i. e., general condition of the patient. Diabetics, nephritics, cardiac and arteriosclerotic patients present a multitude of problems to be considered in treating fractured femurs and before resorting to any treatment, the whole of the patient must be studied and that treatment is pursued which will fit the individual case most satisfactorily. Herein lies the fact that a certain number of cases were not treated by the Whitman method. The average of those not treated by the cast method was 78 plus years, the ages ranging from 68 to 85 years. In all cases it was believed that the manipulation and the necessary anesthetic would be fatal to the patient. It is possible that if a cast applied in the Whitman position could have been applied, the mortality rate for this series would have been much lower. In those cases where casting was not advisable, the patient was made as comfortable as possible, the fractured limb splinted with sandbags and pillows and the patient moved regularly to prevent decubitus ulcers and hypostatic pneumonia. All of these cases are charity cases and a fair proportion of them were entirely uncooperative. Some would tear off the splints and extension and one succeeded in breaking his cast so that another had to be applied. Thus the mental status of each individual is a factor to be considered, also.

The average stay in the hospital could unquestionably be cut down if it were not for the fact that these are entirely charity cases and until the case is able to take care of himself he must necessarily be cared for at this institution. The average period of hospitalization for the entire series was 90.2 days.

SUMMARY

1. Fractures of the upper end of the femur can readily be classified as to 1, fractures through the neck; 2, fractures through the great trochanter; 3, subtrochanteric fractures.

2. In the series presented there were more fractures through the neck than through the trochanters and more in men than in women.

3. Fractures of the neck of the femur are a result of indirect injury such as a fall to the floor, sidewalk, etc.

4. Fractures through the trochanters are more frequently produced by direct injury than by indirect injury to the hip.

5. Cases, either fracture of the neck or trochanters, treated by the Whitman method, showed uniformly good results, although the general mortality for the series was 42.3 per cent, the mortality record for those treated by the cast method was 13.3 per cent.

6. The cases not treated by the cast method were extremely poor risks, the fracture being complicated by poor general condition and nutrition, disease or poor cooperation on the part of the patient, and constitute a large proportion of institutional cases.

7. The mortality risk is in direct proportion to the age of the patient apparently regardless of the type of hip fracture.

ADDENDUM

The carrying out of the treatment of the cases reported was done under the direct supervision of the visiting staff and Dr. M. E. Lathrop, formerly resident officer, Douglas County hospital. The diagnosis in every case was corroborated by x-ray findings. The author wishes to express his appreciation to Dr. J. E. Summers, Chief of Staff, for his interest and help in preparing this paper.

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TOMMY'S FAULT

Nurse: "Come and see what the doctor brought your mother."

Tommy: "Yes, and I bet she blames me. He wouldn't have known where we lived if I hadn't got the flu."

"It's a little confusing," said Uncle Bill, "but whenever the doctor treats me I have to pay for it."

ANTERIOR POLIOMYELITIS*

Diagnosis and Specific Treatment During the Acute Preparalytic Stage.

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By far the large percentage of cases of anterior poliomyelitis are undiagnosed until the typical lower motor neuron paralysis appears. Can these cases be diagnosed earlier? If they can, is there any adequate or specific therapy? These questions I will attempt to answer by giving the present status of our knowledge.

Historical: Anterior poliomyelitis is an ancient disease, typical paralyses having been described from mummies that died in 3700 B. C. In 1787 we find our first recorded case. Heinne in 1860 named the disease *poliomyelitis anterior acuta*. Medin in 1890 described epidemics and its contagion. Flexner, Draper, Rosenow and others in the present century have contributed to the epidemiology, early diagnosis, immunology and treatment.

With all that we know of the disease we still find its manifestations elusive, methods of control not known, etiology uncertain, diagnosis a problem and treatment in question. The management of an acute case calls for the best in medical skill.

Epidemiology: The question of contagion and spread of the disease is much in dispute. Leaving out the various opinions we can only say that its contagion is mild. Descriptions of direct contact infection are rare. The spread of the disease is either through healthy carriers or some intermediary indirect contact such as milk, flies, etc.

Early Symptoms and Findings: Clinical picture of the preparalytic stage: We are largely leaving out of discussion the diagnosis after paralysis has set in, since formerly this was largely the basis upon which a diagnosis was made.

The early symptoms usually appear in the following order of frequency:

1. Unexplainable fever over about a three day period, averaging about 102°, accompanied by general malaise, a rapid pulse and prostration greater than a fever of 102° would indicate.
2. Gastrointestinal upset, usually with marked vomiting and constipation. The picture at first is often that of intestinal infection.
3. Severe headache.
4. Pain and stiffness of the neck. Usually resistance is shown in anterior flexion, but rarely is there retraction of the head as in meningitis.
5. General muscular soreness and hyperesthesia.
6. Nervous instability.
7. Sore throat.
8. Apathy, drowsiness or desire to be left alone but rarely coma.
9. Tremor, especially of hands.
10. Slight Kernig sign.
11. Tache cerebrale.
12. Retention of urine for a twelve to twenty-four hour period.
13. In certain cases acute bulbar symptoms come on first.

These acute symptoms last five to ten days. Just prior to the onset of the paralysis the meningeal symptoms appear. The onset of the paralysis comes from the third to fifth day after onset of the acute symptoms. The physician is not often called until twenty-four hours after the onset, therefore he may have only forty-eight hours in which to make a diagnosis in the preparalytic stage. In the face of an epidemic he will be on guard. In a sporadic case he may overlook his opportunity. After the acute stage, the problem becomes one entirely of orthopedic care.

Onset of Paralyses: In the upper extremities, the paralysis usually sets in proximally at the shoulder group, especially the deltoid, and travels distally. Recovery takes place oppositely, with the deltoid less likely to recover.

In the lower extremities, the paralysis sets in distally and progresses proximally, with the most recovery around the hip joint region. The tibialis anticus is most affected and slowest of recovery.

Upon the above described clinical picture a diagnosis can be tentatively made in the acute preparalytic stage. Diagnosis is positively made upon spinal fluid examination. From the literature one is surprised to find that in less than ten per cent of reported cases spinal punctures were made for diagnosis or treatment. This would indicate that physicians have not learned the value of spinal fluid studies in this disease. It also proves that the large percentage of cases are not diagnosed until the paralytic stage sets in. Unless earlier diagnoses and better treatment are administered during the preparalytic stage, we can never reduce the terrifically high morbidity of paralyses.

Spinal Fluid Pathology: As stated before, a diagnosis early in the disease cannot be positive without spinal fluid findings of the disease. The most important finding is increased cell count, a pleocytosis of from fifty to one thousand. The average is about two hundred fifty. During the first twenty-four hours these are largely polymorphonuclear cells, later the lymphocytes predominate.

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*Read before the Otoe County Medical Society, September 8, 1930.

The spinal fluid usually is under increased pressure, at times clear but more often slightly turbid if cell count is over two hundred. It is cloudy as in meningitis if around one thousand cells per c.m. The protein content is always increased during the acute stages.

The cell count, which is the reliable guide, must be done immediately and not sent to a laboratory. A drop undiluted on the counting chamber is counted as an ordinary blood leukocyte count. As the paralyses set in the cells disappear.

In the absence of meningeal signs in a suspected case. clinically the diagnosis of poliomyelitis is probably ruled out; with a normal spinal fluid cell count, the diagnosis is positively excluded. We have answered the first of our questions. An early diagnosis can be made.

TREATMENT

The question of adequate curative therapy in the acute stage resolves itself into considering the following therapeutic measures.

1. Spinal drainage.
2. Immunized horse serum, antistreptococcic (Rosenow's).
3. Immunized convalescent human serum.

Early spinal drainage is advocated by many authorities as of value but has no specific value. Undoubtedly where increased spinal pressure is present drainage is palliative and may lessen congestion and help prevent certain sequelae. It is therefore indicated in these cases.

There is considerable controversy in the literature over the value of Rosenow's immunized horse serum made from his isolated strain of streptococci from acute cases. Rosenow's colleagues claim excellent therapeutic results from its use. Many reports with use of the so-called specific horse serum are quite convincing as to its specificity. On the other hand Flexner, of the Rockfeller foundation. has little good to say for it.

Diveley(1) studied the comparative results obtained from the use of Rosenow's and human convalescent serum with untreated cases in monkeys inoculated with the disease and concluded that both convalescent and the antistreptococci (Rosenow's) serum are capable of neutralizing the virus of poliomyelitis but the neutralization is more complete with human convalescent serum. Monkeys recovered more rapidly and with much less residual palsy. Both are specific but convalescent serum more potent. Better results were obtained when given early though recovery was noted when the serum was given forty-eight hours after definite paralysis was present.

In the few instances in which we have used the Rosenow's serum we have personally been unable to form an adequate opinion as to its specificity. Since there has been so much controversal opinion, we have decided to rely entirely upon human convalescent serum.

Convalescent Serum: Experimentally this serum has conclusively been proven to be specific.

Levaditi, Flexner and many others have shown it to be capable of neutralizing the virus of the disease. One c.c. of convalescent serum rubbed with 3 c.c. of cord suspension virus (which is a fatal dose for monkeys) neutralized the virus, and also twenty-four hours after an intradural injection of a fatal dose, 10 c.c. of serum protected monkeys from paralysis.

Aycock and Luther(2), in a study of 106 cases seen during the first four days and treated by intraspinal and intravenous human convalescent serum, then examined by trained orthopedic examiners at Harvard, found that 64 per cent developed some degree of paralysis, 5.7 per cent of the treated cases developed severe grades of paralysis, while 46 per cent of untreated cases had severe palsies. The mortality of treated cases was .92 per cent, in untreated cases 14 per cent. The degree and severity of the paralysis varied with the interval elapsing between the onset of the disease and the time of treatment. These treated upon the first day had less paralysis.

Ayer(3) in a series of 133 cases had 61 patients who were diagnosed in the preparalytic stage and were given serum, 50 of whom did not paralyze. There were 12 deaths in the entire series. The death rate was 9 per cent as compared to 24 and 28 per cent in previous local epidemics.

Convalescent serum is useless in the paralytic stage unless given very early after the onset of paralysis, with continuing fever and persisting cellular reaction in the spinal fluid of over 200 per c.m.

Technic of Preparation of Serum: The blood is withdrawn from a post-poliomyelitic patient, preferably within four years after the disease, although longer periods of immunity exist.

We withdraw the blood from the patient and place it into sterile centrifuge tubes which are then covered with sterile rubber finger cots. After the blood has clotted and the serum has started to separate, the tubes are each centrifuged for one half hour. The tubes are then left in the refrigerator over night and the separated serum is collected the next morning in large test tubes and heated in a water bath for one half hour at a temperature of 56 centigrade, to destroy the complement. The serum is then put in ten c.c. or larger ampules and sealed. These are placed in the refrigerator and used when needed. If the serum is not going to be used for a long time a drop of trikresol can be added to insure against bacterial growth. About 250 c.c. is usually withdrawn from the patient and this amount makes about 100 c.c. of clear serum.

Technic of Administration: The serum is given intraspinally, cisternally, intramuscularly, 10 to 25 c.c. or more if needed. Spinal drainage is done, then 10 c.c. for infants and 25 c.c. for adults is injected. The injection is repeated in twelve to eighteen hours if the fever is 101° or the cell count over 200. Usually opportunity is present for only two doses. Never wait for another day. Give when in doubt. There is very little reaction from the serum. The second question is answered. We have a specific serum!

CONCLUSIONS

1. Preparalytic poliomyelitis is a distinct clinical entity. A diagnosis can be suspected and then confirmed by characteristic spinal fluid findings, especially pleocytosis. Spinal punctures should always be done where there is the slightest question as to diagnosis.

2. Human convalescent serum is at present the best proved specific treatment. When given early, intramuscularly and intraspinally during the preparalytic stage, it prevents paralytic sequelae and lowers mortality. The earlier the treatment, the more successful.

In communities where poliomyelitis is present such serum should be collected by a laboratory and made available for the profession.

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AND THANKSGIVING DUE SOON

I go to Doctor Dingbat Giles for divers kinds of pills; my liver's filled with bitter bile my poor old stomach's ill. My tongue is coated, tastes dark brown, a sharp pain stabs my slats; my constitution's all run-down, there's not a doubt of that. "Oh, doctor, heal me or I die! I am both sad and sick!" I shout in accents wild and high. "And please do it right quick". "You have transgressed all nature's laws," the man of herbs replied. "The gent who lives to fill his jaws, 'twere better if he died! You live on greasy pies and cakes, baked beans and lobster stew, and now you're filled with pains and aches, and don't know what to do. You gorge your suffering inward parts, but take no exercise; good sense should tell you at the start such acts are far from wise. For when you take a midnight lunch of oysters, cheese and clams, the undertaker has a hunch to oil his funeral vans. You idly sit and gormandize, because the food seems fine, while coffin builders take your size for caskets three by nine. Go, take these pellets red and white, walk ten miles every day; retire at seven bells each night, and mend your foolish way. Content your taste with milk and bread, and simple foods like these, else you'll soon slumber with the dead, where poppies scent the breeze!"

I pay a fee I can't afford, resolve no more to sin, but when to health I am restored, I'll do the same again!—H. C. Fort.

FRACTURES OF BONES OF THE FOOT OTHER THAN THE OS CALCIS

W. L. Brown and C. P. Brown, El Paso, Texas (*Journal A. M. A.*, February 15, 1930), report that in a recent series of forty-six cases of fractures of the foot excluding the os calcis, there were twenty-eight single and eighteen multiple fractures, and the incidence for the metatarsals was about equal except for the fourth, which was the smallest. There was one fracture of the astragalus, one of the cuneiform and two of the sesamoids. When one considers forty-six days the average loss of time, as reported by the Industrial Accident Commission of Ohio, for a fracture of the metatarsal, and thirty-three days for the fracture of a phalanx, as reported by Davis, and also recognizes that these fractures are the most common of all, one can then realize the tremendous loss to labor and industry when disability is prolonged beyond the normal period because of the lack of proper diagnosis. It has often been said that if one would take as much pains in the diagnosis and treatment of fractures of the foot as one does in fractures of the hand, the results would be greatly improved.

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ETHICAL ADVERTISING FOR PHYSICIANS

Much is said about medical ethics by those who know little about it. Not only the laity, but physicians themselves are chief offenders, for be it known that many physicians have never read the Principles of Ethics promulgated by the American Medical Association, although they talk glibly about what they conceive to be the lack of ethical conduct in others. Paraphrasing the Golden Rule it may be said that medical ethics is based on the principle "Do unto others as if you were the others."

The matter came up recently in one of our live county societies with special reference to advertising. Advertising in a modest manner is not forbidden the doctor by the code. Manifestly a physician cannot do like the grocer, say to his people "If you need anything in my line, come to me, I can give you more for your money than anybody else", or like the dry goods man, after marking up the goods 10%, advertise in his Red Tag Sale "Tremendous Bargains". The honest physician can make no such promise. What he can promise is his best effort to discover what is wrong with the patient and the application of the best knowledge and skill he can bring to bear in the effort to effect a cure.

It is, therefore, perfectly proper for a physician to announce in a card his name, office, office hours, and his special line if any. Many physicians carry such cards in the newspapers—and all should do so. The objectionable, surreptitious advertising, referred to in the county society quoted above applied to the use of doctors names in connection with accidents and minor cases and births. If Mr. and Mrs. Jones are the proud parents of a new son, why is it necessary to say Dr. So-or-So "reports" the fact. It must be conceded that a doctor's admiring newspaper friends sometimes take advantage of him in this respect. but most frequently such publicity is inspired by the doctor.

This is what the Principles of Ethics says about advertising: "Solicitation of patients by physicians as individuals, or collectively, in groups by whatever names these be called, or by institutions or organizations, whether by circulars or advertisements, or by personal communications, is unprofessional. This does not prohibit ethical institutions from a legitimate advertisement of location, physical surroundings and special class—of any—of patients accommodated. It is equally unprofessional to procure patients by indirection through solicitors or agents of any kind. or by indirect advertisement, or by furnishing of inspiring newspaper or magazine comments concerning cases in which the physician has been concerned. All other like self-laudations defy the tradition and lower the tone of any profession and so are intolerable. The most worthy and effective advertisement possible, even for a young physician, and especially with his brother physicians, is the establishment of a well merited reputation for professional ability and fidelity. This cannot be forced, but must be the outcome of character and conduct. The publication or circulation of ordinary business cards, being a matter of personal taste or local custom, is not per se improper. As implied, it is unprofessional to disregard local customs and offend recognized ideals in publishing and circulating such cards.

"It is unprofessional to promise radical cures; to boast of cures and secret methods of treatment or remedies; to exhibit certificates of skill or of success in the treatment of diseases; or to employ any methods to gain the attention of the public for the purpose of obtaining patients".

THE MISSOURI VALLEY MEETING AT DES MOINES

The hope of the Medical Society of the Missouri Valley is that it may give opportunity to the faculties of the universities of the district, to the members of the society, and to invited guests, to present such work as will tend to place the practice of medicine on a higher scientific basis.

This hope has been justified by the programs presented at the several meetings held since the society has been reorganized, as well as by the attention given to the speakers by those in attendance. The attendance at the meeting, October 15-17, was around two hundred; less than one might expect, but the interest manifested, rather than numbers, is the determining factor in judging the success of a meeting.

Dr. W. L. Bierring, Des Moines, discussing the Coronary Problem in Heart Disease, advanced the proposition that coronary disease is not an angina pectoris and is not to be treated with nitrites, but with morphia and absolute rest in bed. Patients with coronary disease last longer than those with angina pectoris.

Dr. F. Lowell Dunn, Omaha, speaking of the Variability of Insulin Reactions, cited cases of persons picked up on the street unconscious, suspected of being drunk, suffering from an epileptic fit, or some like ailment, actually suffering from insulin reaction and plead for greater care in diagnosis.

Dr. Russell M. Wilder, Chicago, spoke on Glycosurias other than Diabetes Mellitus and also gave a diabetic clinic.

Dr. Loyal Davis, Chicago, spoke on the diagnosis and surgical treatment of brain tumors and gave a neurological clinic.

Thursday morning was largely given over to a symposium on Goiter, participated in by Dr. F. R. Peterson, Iowa City; Dr. Boyd Anderson, Des Moines; Dr. Aldis A. Johnson, Council Bluffs; Dr. Julian Boyd, Iowa City; and Dr. Willard Bartlett, St. Louis, who also gave a goiter clinic.

Dr. Laurence H. Mayers, Chicago, presented the diagnosis and treatment of arthritis deformans. Different strains of streptococci are responsible for the disease and treatment is based on the differentiation of the strain responsible. He also gave a clinic.

Dr. E. S. Judd, Rochester, Minn., President-elect of the American Medical Association, discussed the Association of the Liver in Biliary Disease.

The last day was largely devoted to the subject of Cancer, the outstanding discussion being presented by Dr. J. C. Bloodgood of Johns Hopkins.

Omaha men on the program, besides Dr. F. Lowell Dunn, mentioned above, were Dr. John B. Potts, Dr. John Kleyla and Dr. James F. Kelly.

Want of space does not allow fuller comment of a program and a meeting of the highest excellence.

Dr. W. P. Wherry, Omaha, was elected president-elect and Dr. J. D. McCarthy, Omaha, was re-elected secretary-treasurer.

THE CANCER PROBLEM

The past year has not been productive of any epoch-making advances in the cancer problem. Cancer has been found in the fossil remains of prehistoric animals; it has been observed in Egyptian mummies who lived four thousand years before the Christian era and references are found in the earliest writings of ancient times, yet with the passing of time we seem to be no nearer to the secrets of the cause of cancer, nor has there been any notable advances made of late in treatment.

We have experienced in the past year a notable and regrettable incident in an alleged cure for cancer that was exploited in the press and awakened world-wide interest but now that it is no longer "news" this episode seems to have died "aborning" and we are back again to where we were a score of years ago—to the limitations of surgery, radium and the x-rays as the only dependable agencies at our command. We can say no more than that the problem of cure rests in early recognition and early application of these remedies.

It would seem that we have reached the limits that can be attained by surgery and it remains to be seen how much more can be accomplished through improved technic in irradiation. Year by year we are making advances in irradiation therapy and a greater and still greater percentage of "cures" are effected through irradiation, not alone in early cases but in the group of inoperable cases. As the lay public becomes more cancer conscious they will seek relief at an earlier time and the results will be correspondingly more favorable.

Only about one-fifth of the cancer cases in large cities apply for diagnosis and treatment in the operable stage of the disease and it is fair to assume that a smaller proportion is found in the rural districts. Francis Carter Wood believes that these percentages are an exaggeration. But whatever the facts may be, it is apparent that we can hope for no material advance in the control of cancer until we have a more responsive reaction from the public. No more need be said to justify the efforts of the American Society for the Control of Cancer and other agencies in their efforts to enlighten and awaken public interest.

I quote Francis Carter Wood, who has recently published a bulletin on "The Need of Cancer Morbidity Statistics", who writes: "In rural districts practically no cases come in time for curative treatment. This situation is due in part to the extreme difficulty of the diagnosis of the disease, in part to the gross ignorance of the patient, and in part to the lack of modern training of a considerable portion of the medical profession. Again the activities of quacks, mental healers and others, who criticise the methods used by the medical profession, play a part; and often such irregular healers urge patients to follow a course quite different from that advised by the physician."

There is a tendency of late to speak of the "arrest" of cancer rather than of the "cure" of cancer because of the added experience of the profession in witnessing recurrence as late as 10 to 15 years after the removal of the primary growth and the finding of similar and independent growths in remote portions of the body years after the original growth has been apparently removed. And so it has come to pass that we are inclined to refer to the treatment of cancer as palliative rather than as curative.

Again I quote Francis Carter Wood, one of our foremost authorities: "Physicians on the whole are rather fed up with the general statement of propagandists that 2 woman in 5 and 1 man in 8 of those dying between the ages of 45 and 65 will pass on from cancer. They are only mildly interested in that fact that cancer is now second to heart disease in the list of causes of death. What they do want to know is what to say to the individual who has a cancer. For example, does any form of treatment really prolong life? We can answer this in a positive way. For those who come with cancer in an exceedingly early stage, surgery, radium and x-rays have unquestionably prolonged the lives of many for years, so long in fact that it is proper to speak of a "cure". But at least 80 per cent of those who consult a physician are entirely beyond cure." No more convincing argument can be advanced for the promotion of periodic medical examinations. Unquestionably many an unsuspected growth would be revealed that would otherwise escape notice in its incipient stage.

—**Palmer Findley, Omaha.**

RHEUMATIC ENDOCARDITIS

In the matter of rheumatic endocarditis, I think we all have had the experience that the patients who come to us with chronic endocarditis of a rheumatic type are far greater in number than the cases having acute rheumatic endocarditis that we meet. From this simple observation, one wonders whether or not, there are a great many cases of mild acute endocarditis that we do not recognize or that perhaps do not even seek medical care, while they are in the acute attack. It is a fact that a great many students in the high school and during their first year in the University have fairly marked systolic murmurs. In the course of three or four years these murmurs disappear. Of course, systolic murmurs by no means indicate a valvular lesion. However, it might be possible that some of these students in whom we discover these murmurs might finally come back later with a chronic rheumatic valvular disease. It has been my experience that an old endocardium lesion is sometimes lit up in what we call sub-acute endocarditis after an attack of influenza. The electrocardiograph is a strong factor in diagnosing heart disease. It is important in making diagnosis of disturbed conduction. I feel that we should be careful and not put too much importance upon electrocardiograph findings. We should not depend upon these findings too much. We should not let these findings supplant the importance of other findings. For instance even in coronary disease, the electrocardiograph findings, in a great many cases, are not more important than the finding of a large heart.

—**H. J. Lehnhoff, Lincoln.**

POLIOMYELITIS

This disease, commonly called Infantile Paralysis, *is contagious* and in the absence of epidemics not recognizable prior to evidence of paralysis. Children under school age are very susceptible, but youths and adults do contract this disease. The fulminating or fatal form seems to be most prevalent this year in the 20 to 30 year age group. The disease is probably transmitted chiefly by means of secretions from the nose or throat of a patient or "carrier". No vaccine or serum has been developed to prevent poliomyelitis.

12 cases of this disease were reported for August, with a tendency toward increase in September that developed into a sharp rise of 48 cases in the last ten days, indicating the probability that October may again be the peak month, as has been the situation most frequently in Nebraska according to available records.

The insidious nature and present threat of this disease, which is wide-spread throughout the state, call for the fullest cooperation with all local boards of health. Every suspected case must be promptly quarantined, including the quarantine of immediate contacts. A suspected case is any case of illness in which it is not possible to definitely rule out poliomyelitis.

Keep schools open unless the local board of health actually quarantines all pupils upon their respective promises—this is within the authority of a local board of health, though rarely indicated. The school authorities are urged to be unusually alert to detect evidence of illness in any pupil and if found or suspected, exclude the pupil from school until definitely assured no infection exists. To some this may appear radical procedure, but we are dealing with a treacherous disease, so disastrous in its consequences, either through fatality or permanent physical impairment (crippling), that there should be no hesitancy in the enforcement of any safeguarding measure.

While visiting the ill is usually a kindly act motivated by high ideals, the practice should be refrained from until it is definitely known that the indisposed or ill person does not have poliomyelitis or other contagious disease.

Physicians have been cooperating in an excellent manner and it is requested that parents and all citizens do likewise. Prompt isolation of an indisposed or ill persons until such time as your family physician is assured that no contagious condition exists presents the highest type of cooperation in the face of any threatened epidemic. Such cooperation, being sound practice, not only removes the danger of disease spreading but gives assurance of control.

—State Bureau of Health.

STATE MEDICAL ASSOCIATION HEALTH PROGRAM AT RECENT STATE FAIR

The Nebraska State Medical Association Health Program at the 1930 State Fair was visited by many thousands of people. There was a constant flow of interested people through the exhibition hall. The movie theatre operated from 9 a. m. until 5 p. m. and at all times there was a crowd viewing the health films. The Emergency Hospital cared for several thousand cases of illness and injury. The first aid demonstration attracted much attention.

Besides these many activities, Periodic Health Examinations were given to 412 babies and children, 199 adults, 8 prenatal examinations to expectant mothers, 109 audiometer tests for acuity of hearing, and 32 4-H Club boys and girls. These examinations revealed that 91% of the adults and 80% of the babies and children had defects in need of medical attention. Of the 412 babies and children examined only 63 had been vaccinated and 57 had received T.A.T. The average hearing loss for the 109 tested was 9%.

The examination records have all been sent to the family physicians designated by the patient and the patients and parents have been notified to call at their physician's office for interpretation of the record and advice regarding treatment. In all, 619 patients have been placed in the hands of 243 physicians as a result of these examinations.

This Health Program required the services of 132 physicians, all members of the Nebraska State Medical Association, who donated their time and skill to this project. The Public Activities Committee appreciates the loyal support and hearty cooperation it received from this group and wish to thank each and every one for his most valuable assistance.

—E. R. Hays, Chairman,
Public Activities Committee.

PROCTOLOGIC HINT NO. II

Nearly all patients with anal or rectal pain will come in and tell their doctor that they have piles, and wish a prescription. Their diagnosis should not be accepted and an examination should be made on every case.

—L. E. Moon, Omaha.

Dear Reader:

The Journal and the Cooperative Medical Advertising Bureau of Chicago maintain a Service Department to answer inquiries from you about pharmaceuticals, surgical instruments and other manufactured products, such as soaps, clothing, automobiles, etc., which you may need in your home, office, sanitarium or hospital.

We invite and urge you to use this Service.

It is absolutely free to you.

The Cooperative Bureau is equipped with catalogs and price lists of manufacturers, and can supply you information by return mail.

Perhaps you want a certain kind of instrument which is not advertised in the Journal, and do not know where to secure it; or do not know where to obtain some automobile supplies you need. This Service Bureau will give you the information.

Whenever possible, the goods will be advertised in our pages; but if they are not, we urge you to ask the Journal about them, or write direct to the Cooperative Medical Advertising Bureau, 535 N. Dearborn St., Chicago, Illinois.

We want the Journal to serve you.

EDITORIAL PARAGRAPHS

Early in October 648 cases of infantile paralysis were reported in the United States.

The notorious Brinkley of Milton, Kansas, has had his license revoked by the Kansas State board.

That bee stings are serious was again demonstrated in a case at Shelton this state when a little girl after being stung by a bee was unconscious for nearly an hour.

The American Association of Oral and Plastic Surgeons honored Omaha by a meeting October

LIBRARY OF THE
COLLEGE OF PHYSICIANS
OF PHILADELPHIA

1st. Dr. William Shearer, Omaha, is vice president of the association and had charge of the Omaha meeting.

The cause of the so-called "Jake" paralysis is not yet fully understood. It is thought however that most cases will slowly recover in a period of about a year. It is though that about 20,000 cases have occurred.

Of seventy-two medical schools in the United States, it is said there are but three that offer anything in the nature of a course in medical economics. It is time the other sixty-nine wake up to the needs of the times.

The Armbruster ergot episode is closed. Armbruster insisted that moldy and wormy ergot was being used by manufacturing pharmacists in preparing ergot preparations. The Pure Food and Drug Bureau decided against his contention.

Bear's maggot treatment for osteomyelitis reminds the editor that Professor Peck of the Iowa University College of Medicine nearly fifty years ago stated that maggots in wounds were harmless since they attacked dead tissue only—living tissue is not disturbed.

Election time is at hand and physicians, resident in the Omaha district, should make every effort to bring about the election of Dr. A. C. Stokes, of Omaha, as Regent of the University, for the best interests of the University in general and for the College of Medicine in particular. Medical representation on the board is needed.

As indicating the apparent amplitude of trained nurses a survey made by The Committee on the Grading of Nursing Schools seems to indicate that in a period of heavy sickness load only two per cent of those patients who needed a special or private duty nurse were unable to get one, it was shown by the answers of 4,000 physicians to questionnaires on the demand for nurses in their own practice.

A child health clinic for the physically handicapped child was held at Beatrice, the Elks, Rotarians, Kiwanians and the Gage County Medical society participating. After the general examination of each child, Dr. R. D. Schrock, Omaha orthopedist, made the final examination. The findings and suggestion for treatment were communicated to the parents at the conclusion of the examination. Such cooperation must result in much good to the handicapped child.

The Central States Association of Obstetricians and Gynecologists met at Excelsior Springs, Mo., October 9-11. Dr. Palmer Findley, Omaha, president, gave as his presidential address "The Teaching of Obstetrics and Maternal Mortality". The following Nebraskans are members of this association: Drs. Palmer Findley, Willis Taylor, Earl C. Sage, Frank Murphy, Charles Moon, Ralph Luikart, L. O. Hoffman, Maurice Grier, Omaha; Drs. Elmer Hansen, Harold Morgan, Lincoln. Dr. H. T. Harvey, Lincoln, read a paper at the meeting by invitation.

The Milbank Memorial Fund records the donation of $50,000 toward an attempt to bring health to a community in China containing 400,000 people with not a single qualified physician, a community in which over 90 per cent of the people are illiterates and most of them are poor, ignorant and superstitious, living in mud huts, blackened with soot and smoke, swamped with flies, mosquitoes, bed bugs, fleas and rats. Even the so-called middle classes keep their domestic animals in the quarters where they sleep, cook and eat. Their lives are haunted with frequent sickness and disease.

An Omaha hospital—the Wise Memorial—has seen the light, which in other words may be stated as having awakened to the fact that it is an humanitarian institution, instead of an invalid hotel that must make money and pile up the surplus. The Wise Memorial has reduced the price of private rooms from $30 to $21 and single beds from $21 to $14. The board feels that the hospital should be operated so as to be helpful as possible to people of limited circumstances. Inasmuch as the Wise is one of the best built and best equipped hospitals in Omaha it is likely that this move will influence other hospitals to like reductions and thus relieve a situation that has become well nigh impossible.

Is it not likely that what hospitals need more than anything else is efficiency in management? We like to compare hospitals and hotels and on that basis does it not seem that hospitals should flourish with the fees demanded, even allowing for care of indigents?

Dr. Fred H. Albee, *International Journal of Surgery*, for September, 1930, writing on "The Bacteriophage in Surgery" makes the following statement which should interest Nebraskans:

"Irrespective of the relative merits of the bacteriophage-Orr treatment as to its healing influence upon the wound, its advantages to the surgeon are immeasurable in that it allows him free rein without interference in his many times desperate problem of immobilization and control of suppuration joints or of fracture fragments, difficult enough in the absence of infection, but almost unsurmountable in the presence of infection, particularly when complicated by a nervous patient and the necessity of frequent dressing, under general anesthetic involved in the Carrel-Dakin and other methods. In several cases of compound comminuted infected fractures and virulent suppurating joints, I am convinced that not only limbs, but lives have been saved by the employment of this method. With all its advantages, the simplicity and ease of applying the method is striking.

"The bacteriophage method is the absolute antithesis to the Carrel-Dakin procedure; in place of antiseptics we substitute a dressing purposely without germicidal power; instead of perpetual interference or dressings, we let the wound alone for weeks or even months because it is this very element of allowing the products of the bacteria as well as the granulations to remain undisturbed in contact with the wound that apparently is favorable to the induction of a native bacteriophage. This revolutionary method for the treatment of osteomyelitis has since been applied to other infective lesions to bones and even to lesions where bone is not involved."

The antivivisectionists keep bobbing up here and there from time to time. Recently Clarence E. Richard, managing director of the national antivivisection society, made the charge that cruelty was practiced in the laboratories of the Nebraska University College of Medicine to which Dean Poynter replied in effect that experiments with animals at the school are carried out under regulations which have been approved by the American Society for the Prevention of Cruelty to animals.

Dr. Poynter said that a magazine article which Mr. Richard used as the basis for his "torture" charge, appeared in a medical journal six years ago. It was written by Dr. Sergius Morgulis, chairman of the department of bio-chemistry and Dr. Edwards, who was at that time a graduate student assisting in experimental work.

The experiment was undertaken, Dean Poynter said, to determine a scientific basis for efforts to help under-nourished children.

He declared that the statement by Mr. Richard was a part of a campaign now being carried on by his organization to spread propaganda by distorting the meaning of articles in medical journals.

"Health organizations generally agree upon the value of tests with animals in the war against disease," Dr. Poynter added. "Mankind has been the beneficiary of important discoveries which have come in this way."

He stated that fasting tests similar to those described by Dr. Morgulis have made of diabetes an ailment which is no longer dreaded as it once was.

"In the last analysis," he added, "society must decide which has the most value, the animal or the human being."

THIS MONTH IN MEDICAL HISTORY

October 1930*

1830, October. Philip Syng Physick (1768-1837) of Philadelphia advocated rest in the treatment of hip joint disease. He was a pupil of John Hunter and his teachings have been perpetuated in the treatise on Surgery (1813) written by his nephew John Syng Dorsey. Physick has been called the father of American surgery.

1846, October 16. Dr. William T. G. Morton as anesthesist and Dr. John Collins Warren gave the first public demonstration of the use of ether in surgery at the Massachusetts General Hospital on October 16, 1846. It should be remembered that the terms anesthesia and anesthetic were proposed at that time by Oliver Wendell Holmes.

1930, October. "No surgeon before or since" says Bettany "has occupied so large a space in the public eye" as Sir Astley Paston Cooper. (1768-1841) He was not only enormously industrious but very attractive as to personality and professional skill. His publications were not extensive but he was a popular teacher. His "Diseases of the Testis" appeared in 1830.

MEDICAL PROFESSION AND PATERNALISTIC TENDENCIES OF TIMES

William Gerry Morgan, Washington, D. C. (*Journal A. M. A.*, June 28, 1930), discusses the growth, decline and reincarnation of paternalism in government; paternalism in medicine; voluntary sickness insurance; compulsory sickness insurance; state medicine; the public health movement, and nongovernmental paternalistic tendencies. He calls attention to these matters with a desire to arouse the individual members of the profession to a sense of responsibility in the concerted effort being made to forestall further encroachments on prerogatives which, by virture of training and experience, belong to physicians as private citizens, members of an honored and honorable profession, whose duty is to the community they serve in their endeavor to prevent and to cure disease.

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*Publication delayed.

NECROLOGY

John P. Gilligan, O'Neill, Nebr.; native of Elizabethtown. N. Y.; Albany Medical College, 1890; in practice for several years, with his former preceptor, Dr. John M. Bigelow, then the leading physician of Albany; located at Anselmo, in the spring of 1892 and in December of the same year located at O'Neill, where he remained until his death, a period of thirty-eight years; state senator from 1906-1908; charter member, Elkhorn Valley Medical Society; secretary, Holt County Medical society for a number of years; delegate to Nebraska State Medical Association for many years; president. Nebraska State Medical Association. 1914-15; a man deeply interested in the civic affairs of the community, having served on the board of education 18 years, was chairman of the library board at time of death, was mayor two terms. In early life he was an officer several summers of the Daylight Steamer Line plying between New York and Albany. He died September 28, 1930, of progressive muscular atrophy from which he had suffered for several years, aged sixty-three years. A widow. a daughter and two sons survive. Dr. J. P. Gilligan Jr., Nebraska City, is a son and the daughter is the wife of Dr. Ted Riddell of Scottsbluff.

J. P. GILLIGAN, M. D.

Charles S. Curry, Beatrice. Nebr.: Rush Medical College, 1900; practitioner at Beatrice since graduation thirty years ago; a mild mannered much beloved man; member, Nebraska State Medical Association; died, September 29, 1930, following an appendectomy, aged about fifty-seven years.

Asa B. Stratton, Exeter, Nebr.; Central Medical College of St. Joseph, Mo.; 1895; practitioner at Jericho Springs, Mo., from date of graduation until 1890 when he located at Exeter; a man interested in the civic affairs of the community and a friend of all; member, Nebraska State Medical Association; died August 31, 1930, aged about sixty-eight years.

Julius E. Claussen, Beatrice, Nebr.; retired; Rush Medical College, 1883, and Bellevue Hospital Medical College at a later date; in practice in Omaha three years and at Beatrice nearly forty years until ill health compelled retirement; dropped dead of organic heart disease, September 30, 1930, aged about seventy-five years. He is survived by a widow.

Dan R. Rogers, Ragan, Nebr.; native of Pennsylvania; Jefferson Medical College, 1880; practiced at Martinsville, W. Va., four years; located in Harlan county, Nebr., in 1884 and remained there until his death, a period of forty-six years; an outstanding general practitioner in southwestern Nebraska; said to have kept case records of all his cases during his entire career; member, Nebraska State Medical Association; died October 7, 1930, after a week's illness, aged about seventy-five years. He is survived by a widow, two daughters and three sons. (A sketch of Dr. Rogers was published in the July, 1930, Nebraska State Medical Journal).

A CORRECTION

Dear Dr. Long:

In the October number of the Nebraska State Medical Journal there appears a discussion of Dr. Findley's paper on "Pelvic Irradiation" by myself.

This was printed in the journal without having been submitted to me for correction. It contains several errors. A good deal of my discussion was left out. The thing which I wished to emphasize was that some of the apparently hopeless cases were curable by radium radiation as well as the early cases such as were discussed by Dr. Findley. I stated this specifically in my discussion but this appears only by inference in the printed discussion.

The discussion as printed states that a certain patient was referred by Dr. Charles Kenner. This should be Dr. Charles Kennedy.

In regard to the discussion of Dr. Crummer's case it appears as adenoma sarcoma. This was really a case of adenocarcinoma which puts quite a different light on the matter, as sarcoma is known to be sensitive to radium radiation, but it is not usual to find such a large adenocarcinoma destroyed by radium radiation.

I believe that in every case a proof should be submitted to the author or discussor of a paper before publication.

Respectfully yours,

D. T. Quigley, M. D.

HISTORY OF MEDICINE IN NEBRASKA

Under Book Notices the Journal A. M. A., for September 20, gives the following interesting review of the History of Medicine in Nebraska by Tyler and Auerbach:

This is the first full record of the achievements of the Nebraska medical profession. The editor, Dr. Albert F. Tyler of Omaha, was assisted by twenty-four collaborators from different sections of the state. The beginning of the history of medicine in Nebraska can be traced to the week of Sept. 26, 1819, when United States troops came up the Missouri River by steamboat and landed at Fort Calhoun, near Omaha. One of this band, Dr. John Gale, married an Indian chief's daughter, and his grand-daughter, Dr. Suzanne La-Flesche, afterward Picotte, graduated from the Women's Medical College of Philadelphia. She thus was the only American Indian woman physician. The medical work of Gale and his associate Mower is notable in medical annals in their handling of the terrible scurvy epidemic in 1819, when 500 of the 788 soldiers were ill and 157 of them died. It is indeed a far cry from the saddle-bag days of the pioneer to the airplane of the present, yet one Nebraska practitioner, F. A. Brewster of Beaver City, has been credited with being the first medical man to make a professional call by air. Great steps in progress are incorporated in this story of the frontier doctor who "treated his patient rather than the disease", up to the introduction of aseptic surgery methods in Nebraska by J. E. Summers and A. F. Jonas, who yet live. What would the early pioneers say if they could see the progress medicine has made in Nebraska—the splendid hospitals which have been developed over the state, the medical schools, the war service record and the scientific achievements of Nebraska physicians?

About 114 pages of this book are given to a directory of Nebraska physicians and 129 pages are devoted to more lengthy biographies of the pioneers. The personal data are unusually comprehensive and write-ups are enhanced by many photographs. These personal records are woven into a romantic story of the deeds of the profession. Full accounts are given of such men as Livingston and Peabody, who founded the Nebraska State Medical Association, and von Mansfelde, who did more than any other physician in the state in rendering personal service for organized medicine. Preeminent is that splendid group of men, Harold Gifford, Milroy, B. B. Davis, F. S. Owen, McClanahan, Summers and Jonas, who laid the foundations of effective medical legislation, organized medical societies, and established medical schools, hospitals and publications. Inseparably connected with the Nebraska College of Medicine is Irving S. Cutter, whose abilities were later called into the organization of the Northwestern University Medical School. Noteworthy also is the work done for the Creighton University Medical School by Dr. H. von W. Schulte. Nebraska's war record emphasizes the achievements of the medical profession in the person of Karl Connell, who developed the gas mask, and of A. S. Pinto, yellow fever hero, who was one of the first volunteers to be bitten by infected mosquitos and was one of the survivors of that band of martyrs. The work of the personnel of Base Hospital 49 in the World War receives full review in all its historical significance. Another person who must be included in Nebraska's achievements is Dr. Olga Stastny, who accomplished international recognition for her postwar service in Czechoslovakia and elsewhere on the continent. At the Detroit session she was made president of the National Association of Medical Women. Medical journalism has had some important contributions from the manpower of Nebraska. The Western Medical Review was founded by George H. Simmons, who lived in Lincoln. In 1899 he was chosen editor and general manager of the American Medical Association, which he served for twenty-five years, during which time he inaugurated the present organization of our national body. Dr. F. A. Long of Madison first proposed The Nebraska State Medical Journal in 1907, and since its establishment in 1916 has, as editor, brought it up to its high excellence among state medical publications. This brief summary cannot recount more concerning Nebraska's men of distinction—the book is a complete record of their interesting histories. Not the least important feature of this volume is the account of the events and personalities in the formation of county societies, the frontier line trenches of organized medicine in America. A reading of "History of Medicine in Nebraska" will reveal that Nebraska doctors voluntarily played their part in the spread of the empire westward. Once established, individuals have ever kept the profession on the highest plane of excellence. Every Nebraska physician will find this book invaluable for reference and a surprise from the standpoint of interesting reading. It is recommended to all who are interested in Nebraska's history and particularly in the achievements of Nebraska physicians.

AUXILIARY NOTES

The annual meeting of the Woman's Auxiliary to the Nebraska Medical Association was held at the Lincoln Hotel, Lincoln, May 14th, 1930. The general meeting at 9:30 a. m., was called to order by the president, Mrs. A. P. Overgaard. Minutes were read and approved, reports on the various committees were received and accepted. The President called for reports of County Auxiliaries,—representatives of the following counties responded: Cedar, Cuming, Dawson, Holt, Madison, and Lancaster.

A report of 21 new subscriptions for Hygeia by Mrs. Lucien Stark of Norfolk, was enthusiastically received by the Auxiliary.

Mrs. Clarence Rubendall, historian, gave an interesting report including publicity material covering Auxiliary activities from its organization, including the present meeting.

Mrs. C. A. Roeder, chairman of the publicity, reported successful cooperation with National Auxiliary plans. A convention bulletin board was a new feature of publicity for the convention.

The constitution and by-laws of the Auxiliary were read by Mrs. C. C. Tomlinson, discussed, corrected, and adopted by vote of the organization.

Mrs. Overgaard called for the report from the nominating committee, and the unanimous ballot of the Auxiliary was for the following officers:

President, Mrs. E. W. Rowe, Lincoln.

Vice President, Mrs. Clyde Roeder, Omaha.

President-Elect, Mrs. Morris Nielsen, Blair.

Treasurer, Mrs. Homer Davis, Genoa.

Directors, Mrs. J. M. Mayhew, Lincoln; Mrs. Lucien Stark, Norfolk.

The meeting adjourned temporarily at noon to be resumed at the Lincoln Country Club where luncheon was served. Mrs. John C. Thompson, Lincoln General Chairman, introduced the new officers, retiring officers, and guest speaker, Mrs. James Blake of Hopkins, Minn., who is the Finance Chairman of the Auxiliary to the national association. Her subject was, "The official Health Problems of the National Auxiliary".

Mrs. Thompson closed the meeting by thanking the committees who had so ably assisted her in entertaining the State Auxiliary.

The meeting of the Executive Board was held at the Lincoln Hotel, Thursday, May 15th, 1930, and the President, Mrs. E. W. Rowe, announced the appointment of the following committee:

Secretary, Mrs. B. F. Williams, 3838 Sheridan Blvd., Lincoln.

Organization, Mrs. Clyde Roeder, 497 Elmwood, Omaha.

Hygeia, Mrs. Paul Siman, Wayne.

Public Relations, Mrs. C. C. Tomlinson, 5215 Jackson, Omaha.

Publicity, Mrs. F. L. Rogers, 1901 South 20th, Lincoln.

Parliamentarian, Mrs. George Neuhaus, 3516 Poppleton, Omaha.

The Lancaster Auxiliary maintained a "Hygeia" booth at the Nebraska State Fair in September. Dr. Fordyce, Editor of the "Hygeia" was one of the many visitors.

Presidents of the various county auxiliaries for the year are as follows:

Cedar County, Mrs. A. E. Cook, Randolph, Nebr.

Cuming County, Mrs. W. K. Riley, Wisner, Nebr.

Dawson County, Mrs. R. S. Wycoff, Lexington, Nebr.

Dodge County, Mrs. W. H. Heine, Fremont, Nebr.

Douglas County, Mrs. G. W. Dishong, Omaha, Nebr.

Polk County, Mrs. F. L. Wilson, Stuart, Nebr.

Madison County, Mrs. A. J. Swedehelm, Creighton, Nebr.

Lancaster County, Mrs. John C. Thompson, Lincoln, Nebr.

Lincoln County, Mrs. H. H. Walker, North Platte, Nebr.

Besides these counties there are representatives at large. Much enthusiasm has already been shown in organization and plans for the year's work.

Mrs. George Hoxie, formerly National President Woman's Auxiliary, American Medical Association, was guest speaker of the Lincoln, Nebr., League of Women Voters, October 9th, with a subject of "County Health".

The Woman's Auxiliary of the Dawson County Medical society at a meeting held October 10, Mrs. H. M. Harvey, Gothenburg, was elected president; Mrs. Chas. Scheets, Cozad, vice president, and Mrs. A. E. Reeves, Farnam, secretary-treasurer. A vote of appreciation was given the retiring president, Mrs. Roy Wycoff of Lexington, for her efforts in the initial work of organizing the Dawson county unit. Her determined idea was to make the foundation educational and to preserve traditions. To encourage scientific study of preventative measures as in sanitation and immunization. Her years of medical association with the natives of Porto Rico taught her the value of prevention.

—H. C. R.

THE SOCIETIES

The Omaha-Douglas County Medical Society met October 8. Dr. John Lovett Morse, Boston, spoke on the diagnosis of diseases of children. A good history and a complete physical examination will develop the diagnosis in most cases. X-ray examination and laboratory tests are rarely needed, but if history and physical examination do not clear up the case, x-ray and laboratory should be used. A doctor may be well educated, but lack "horse sense"; a doctor may be well educated, but too lazy to make careful examinations. Dr. W. S. Baer, professor of orthopedic surgery at Johns Hopkins University School of Medicine, spoke on Infectious Arthritis Deformans. Studies of cases by removing a gland from the extremity affected, seem to point to streptococcus hemolyticus as the causative agent.

The Lancaster County Medical Society held a meeting October 7, Dr. C. W. Hopkins, chief surgeon of the Chicago and Northwestern railroad gave an illustrated lecture showing more than thirty different types of head and brain injuries and suggested the treatment for the various cases.

A joint meeting of the **Brown County (Kansas) and the Richardson County Medical Societies** was held at Falls City, September 25. A golf tournament, a banquet and a theatre party for the ladies were features of the meeting. The numbers on the program were a paper on "Angina Pectoris" by Dr. A. H. Haynes of Sabetha, Kans., and a discussion on "The Benefits of the Medical Association" by Dr. W. R. Boyer of Pawnee City.

The members of the **Lincoln County Medical Society** held their regular monthly meeting Thursday evening, September 19, with a dinner at the Yancey hotel. A short business session followed and the program consisted of a paper demonstration by Dr. Bennett of Omaha on "Cysternal Puncture," and talk by Dr. Moody of Omaha on "Internal Medicine".

The **Dodge County Medical Society** and **Auxiliary** gave the initial dinner of the year at the Pathfinder, September 29. Thirty-five members participated. Dr. J. A. Borghoff, Omaha, was the guest of honor and spoke on Dermatology.

The tenth annual meeting of the **Seventh Councilor District Medical Society** was held at Hebron October 23. The program is given below: "The Treatment of Established Infection," W. I. McFarland, M. D., Hebron; "Fevers of Infancy and Childhood, of Idiopathic Origin," Geo. W. Ainley, M. D., Fairbury; "Suture of Musculo-spiral Nerve, with Case Report," Chas. G. McMahon, M. D., Superior; "Simple Therapeutic Procedures Applied to Certain Major Fractures," J. E. M. Thomson, M. D., Lincoln; "The Treatment of Puerperal Sepsis," W. C. Becker, M. D., Lincoln; "Practical Points in Diagnosis and Treatment of Common Brain Conditions," with Lantern Slides, K. S. J. Hohlen, M. D., President N. S. M. A., Lincoln. Following a 7 o'clock dinner Dr. E. C. Foote, Hastings, gave moving pictures of scenes visited by him in India and other foreign countries.

The semi-annual meeting of the **Third Councilor District Medical Society** was held at Pawnee City, October 16, the meeting opening at 4 p. m., with the following program: "Prognosis of Nephritis in Children," L. D. Harman, M. D., Pawnee City; "Child Welfare From a Teacher's Point of View," B. F. Lorance, M. D., Auburn; "Relation of Diet to Disease," E. R. Hayes, M. D., Falls City; Dinner at Exchange Hotel; "The Medical Society," W. R. Boyer, M. D., Councillor; "Maxillary Sinusitis," Earl B. Brooks, M. D., Lincoln; "Post Mortems," George W. Covey, M. D., Lincoln; "Normet's Serum as an Emergency Substitute for Blood Transfusion," John E. Summers, M. D., Omaha.

The September meeting of the **Madison Five Counties Medical Society** was held at Norfolk on the evening of the 16th. A dinner was served to forty guests before the scientific session was held. The program consisting of four numbers was put on by members of the Council Bluffs clinic, as follows: "The Appendix Problem," Dr. Donald Macrae, Council Bluffs; "Fractures, Diagnosis and Treatment," Dr. Karl Wendorff, Council Bluffs; "Diabetes and its Management," Dr. Aldis A. Johnson, Council Bluffs; "What Eyes Can Tell the Doctor," Dr. Abbott Dean, Council Bluffs. Dr. McCrae doubts the ability to diagnose a chronic appendicitis in any case. Other conditions similate appendix trouble, gallbladder disease, ulcer, ureteral stone. When in doubt and patient is willing, remove appendix and relieve patient of the worry of a possible appendicitis. Dr. Werndorff gave the modern treatment of fractures illustrating his theme with numerous slides. Dr. Johnson stressed the need of the fullest cooperation of diabetic patient and cited cases to illustrate what happens in cases not cooperating. Dr. Abbott Dean stressed eye symptoms in various diseases and thought the oculist should be consulted by the general practitioner oftener than he is in cases where examination of the eye grounds give definite findings.

The October meeting of the **Madison Five Counties Medical Society** was held at the Hotel Norfolk on the 14th. Eighty physicians, dentists and their ladies attended the dinner and program, which was essentially a dental program. Dr. William Shearer, Omaha, spoke on Maxillary Sinus Infection and Dr. R. R. Ralston, Omaha, on Alveolectomy.

The **Dawson County Medical Society** and Woman's Auxiliary held a meeting and banquet, at Cozad, October 10. Dr. Adolph Sachs, Omaha, gave a lecture on Diabetes. The society was eager and earnest in expressing appreciation to Dr. Sachs for the lecture.

The **Eighth Councilor District Medical Society** met at Page, October 16. The program was furnished by Lincoln talent as follows: Dr. C. H. Arnold spoke on blood transfusions. Hemorrhages and their control was the topic discussed by Dr. J. J. Loomis. Dr. F. M. Andrus discussed new and old methods of treatment of the prostate gland, and Dr. W. O. Colburn spoke on rickets.

HUMAN INTEREST TALES

Dr. S. O. Harris has located at Chappell.

Dr. A. E. Hanna, veteran physician of Ansley, is reported ill.

Dr. Mayer Shoyer, formerly of Soldier, Kans., has located at Peru.

The Dr. Earl Sage family, Omaha, is happy over the advent of a son.

Dr. H. M. Hepperlin, Beatrice, is a patient at an Omaha hospital.

Dr. Jennie Callfas, noted Omaha publicist, was reported ill last month.

Dr. U. S. Harrison, Neligh, attended the Mayo clinic for several weeks.

Dr. A. C. Graham for the past four years at Nemaha, has located at Auburn.

Dr. S. G. Allen, Stanton, made a business trip via auto to Idaho, in September.

Dr. M. H. Evans, Emerson, has been a patient in a Sioux City hospital recently.

Nehawka, splendid little town and community, is without a physician—and wants one.

Dr. W. F. Milroy, veteran physician of Omaha, submitted to a serious operation recently.

Dr. Stuart Cook, Randolph, gave a talk on "Colds" before the local Lions club last month.

Dr. and Mrs. L. M. Shaw, Osceola, are spending a month in California visiting the daughters.

Dr. H. C. Sumney, Omaha, who has been ill most of the summer is now reported convalescing.

Dr. J. H. Vance, Omaha, has recovered from a serious illness which landed him in a hospital.

Dr. Charles M. Murphy, Omaha, has been placed in charge of the Veteran's Bureau office at Detroit.

Dr. M. F. Schaffer, Alexandria, was elected one of the directors of the Isaak Walton League of the state.

Dr. H. W. McFadden is about to leave Greenwood to take an industrial position at Hines, a suburb of Chicago.

Dr. Muriel Anderson, David City, has returned from Boston where she took a course in physical diagnosis.

Dr. Robert Preston, formerly of Fremont, has gone to New York City as assistant to Dr. Albee, noted orthopedist.

Dr. F. A. Paden, who left Hartington to locate in Brownville, Oregon, a year ago, visited, Hartington friends recently.

The Dr. Glen Miller home in Omaha was robbed of about a thousand dollars' worth of clothing and other articles recently.

Dr. F. W. Luhman, recently located at Taylor, Texas, has returned to his former home at Pender to engage in practice.

Dr. Sarah Blaine Taylor, Omaha, has accepted a position at the Ames (Iowa) Agricultural College as woman's physician.

Dr. David E. Wynegar, who has been practicing at Nehawka, has received a position at Yankton with hospital connections.

Dr. M. M. McVean-Edwards and son, Nebraska City, motored through a part of Minnesota and the Dakotas last month.

Dr. C. E. Sayre, Norfolk, on vacation in the east, attended the Bloodgood clinics on bone disease at Baltimore in September.

Dr. Henry Farrell, formerly of Kearney, has become associated with Dr. J. Stanley Hill, McCook, in eye, ear, nose and throat work.

Dr. Henry B. Lemere, former Omaha eye, ear, nose and throat surgeon, is now located at 607 Hollywood Security Bldg., Hollywood, Calif.

Dr. and Mrs. John Potts, Omaha, spent some time motoring in Lower Canada, visiting such points as Montreal, Quebec and Murray Bay.

Dr. W. J. Conner, who recently located at Fullerton, has been appointed to a position in the U. S. Veteran's hospital at Harrisburg, Pa.

Dr. C. J. Goebel, who recently located at Bloomfield, has been appointed to a position in the Veteran's hospital at Detroit and has taken up the work.

Dr. Mary Bratt, formerly of Arapahoe, is going to China as a medical missionary and Dr. Sophia Warner of Holbrook, will succeed her at Arapahoe.

Dr. Miriam A. Albertson, in practice at Fairmont for the past two years, has been appointed a medical missionary to be stationed at a hospital at Bareilly, India.

Dr. J. A. Phipps, formerly of Elmo, Mo., has become associated with Dr. E. J. Mitchell, Scottsbluff. Dr. Phipps will specialize in gynecology and pediatrics.

Dr. W. W. Arrasmith, Grand Island, has graduated as a "flyer" having recently been licensed as a pilot—the second physician in the state to have this distinction.

Dean Poynter of the University of Nebraska College of Medicine, attended a meeting of the Association of American Medical Colleges at Denver, October 14-16.

The medical bags of Drs. C. B. Calbreath and D. W. Kingsley, Hastings, were stolen from their cars the same night. Morphine is thought to have been the motive for the thefts.

Drs. Charlotte Seiver and R. T. Van Metre, Fremont, spoke before the Parent Teacher's Association recently on The Necessity of Vaccination and Contagion in the Schools respectively.

Dr. E. R. Hays, Falls City, chairman, committee on public activities, represented the state of Nebraska at the meeting of the American Public Health Association at Fort Worth, October 27.

Dr. James F. MacDonald, for a number of years professor of physiology in University College of Medicine, has resigned to pursue studies in Europe and Dr. Charles M. Wilhelm has been appointed to the position.

Dr. and Mrs. J. J. Bruce of Madison went fishing at Lake of the Woods, Canada, in September and brought home as evidence of their piscatorial prowess several muscalonge weighing 30 pounds and an Omaha Sunday paper published their pictures holding the fish as further evidence.

Dr. Charles E. Remy, who began practice at Ainsworth, in association with his father, Dr. G. O. Remy, and who was later connected with state institutions at Norfolk and Yankton and more recently superintendent of the Michael Reese Hospital, Chicago, and Montifiore hospital, Pittsburg, has been appointed superintendent of the Minneapolis General hospital.

BOOKS REVIEWED

STEADMAN'S MEDICAL DICTIONARY (Illustrated); Eleventh Edition Revised: By Thomas L. Steadman, A. M., M. D., Editor of Twentieth Century Medicine and of Reference Handbook of the Medical Sciences. 1222 pages. William Wood and Co., New York. Price $7.50.

Every man in the medical profession should have an up-to-date medical dictionary, but sad to relate, contact with many medical men leads to the conclusion that many physicians get along without this necessary volume.

Steadman's is the only complete standard American medical dictionary with a new revised edition this year and deserves special notice. The rapid progress in medicine during recent years requires frequent revisions of dictionaries as well as of text books to keep pace with the introduction of new terms. This Steadman has done. All the names proposed by the American Bacteriological Society, having relation to medical science, have been incorporated. The recent terms introduced into Radiology have been included. Steadman has always aimed at the purification of medical orthography, which after years of patient effort, has been nearly attained. The general make-up of this dictionary should appeal to the profession.

PRIMER ON FRACTURES: American Medical Association Press, Chicago. Folio, fifty-three pages of cuts and text. Price $1.00.

The "Primer" is intended for use by both students and practitioners. It is not for the purpose of standardizing treatment, but to suggest what constitutes acceptable methods of treatment. It contains the material which found such favorable responses on the part of the visiting physicians at the Scientific Exhibition of the American Medical Association.

After each annual session there was received a large number of requests for the charts, both from physicians and teachers in colleges. It was deemed advisable, therefore, to reproduce under one cover all of the illustrations and in addition to incorporate appropriate legends. The legends were written by the members of the Co-operative Committee on Fractures: Drs. Allison, Darrach and Speed.

Interleaved it will be noticed, are pages for notes; these may be made use of by students whose teachers may care to amplify the material presented or by practitioners who may care to supplement with their own comments.

BOOKS RECEIVED

NERVOUS INDIGESTION, by Walter C. Alvarez, M. D., Associate Professor of Medicine, University of Minnesota. 297 pages, 8 mo., cloth cover. Published by Paul B. Hoeber, New York. Price $3.75.

GONOCOCCAL INFECTION IN THE MALE, by Abr. L. Wolbarst, M. D., Urologist and Director of Urologic Clinics, Beth Israel Hospital, Consulting Urologist, Central Islip State Hospital Manhattan State Hospital, Jewish Memorial Hospital and Madison Park Hospital. 297 pages, 8 mo., cloth cover, one hundred forty illustrations including seven color plates. Published by C. V. Mosby Co., St. Louis. Price $5.50.

DOCTORS AND SPECIALISTS, A Medical Revue with a prologue and a Good Many Scenes, by Morris Fishbein, M. D., Editor of the Journal of the American Medical Association and of Hygeia, the Health Magazine. 118 pages, 10 mo. Published by the Bobbs-Merrill Co. of Indianapolis. Price $1.00.

THE LONG TREK, Around the World With Camera and Rifle by Richard L. Sutton, M. D., Sc. D., L. L. D., F. R. S. (Edin.) Fellow of the Royal Geographical Society; Member of the French Geographical Society; Professor, of Dermatology, University of Kansas. 347 pages, 8 mo., cloth cover, with more than two hundred illustrations. Published by the C. V. Mosby Co., St. Louis.

HOSPITAL OF THE PROTESTANT EPISCOPAL CHURCH IN PHILADELPHIA, Medical and Surgical Reports of the Episcopal Hospital. 460 pages, eight mo., cloth cover. Published by the Press of Wm. J. Dornan, Philadelphia.

"You are working too hard," said the doctor.

"I know it," sighed the patient, "but it is the only way I can keep up the easy payments."—Cincinnati Enquirer.

ROSTER OF OFFICERS—1930

K. S. J. Hohlen, Lincoln, President	1931
Lucien Stark, Norfolk, President-elect	1932
J. M. Willis, McCook, Vice President	1932
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AN EMERGENCY SUBSTITUTE FOR BLOOD TRANSFUSION*

J. E. SUMMERS, M. D.,
Omaha, Nebr.

The distinguished French surgeon, Prof. Cuneo, reported to the National Surgical Association of France, June 22, 1929 his Animal Experiments and Clinical Corroboration of Dr. Normet's claims for the use of a Citrate Solution in the treatment of Severe Hemorrhages and States of Shock in Man. This was reported in Bulletin and Reports of the National Society of Surgery, No. 21.

Parke, Davis & Company, Detroit, were kind enough to make up for me fifty containers, each of 20 cc. holding in solution and suspension a certain quantity of the citrate which, when added to 1000 cc. of normal salt solution is dissolved and introduced intravenously as would be a normal salt solution or citrate blood.

I have had nineteen clinical cases in the hospitals where I work, in which the "Normet Solution" has been used, and our results have been strikingly favorable. Several have apparently been life-saving, and others good. They have all done as well as usually follows a blood transfusion. Some of my colleagues to whom I have given the making of the Normet Solution, are most favorably impressed with their results. The contents of the Parke-Davis containers, when added to 1000 cc. of sterile normal salt solution, goes so slowly into solution, six hours, that as an emergency aid, except when kept prepared in flasks as I have it in the hospital, it is disappointing. However, through correspondence with the pharmaceutical house in Paris which makes the solution into ampoules, some for transfusion when added to 1000 cc. of normal salt solution, others for medicinal uses, intravenously or subcutaneously. I find that they now have an agency in Philadelphia, The High Chemical Company. I am using their product and it seems to be equally as efficient as that of Parke-Davis, but more convenient from every point of view.

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*Just received from Eli Lilly & Co., Ampules 100 cc each in which is dissolved ready for clinical use, the citrate salts as per the original Normal formula. I am going to use these ampules. I hope the thing is not a myth.—J. E. S.

I have taken occasion to present the subject before a number of audiences of physicians in Omaha and elsewhere, illustrating it by a moving picture of an operation upon a dog, in which, after bleeding the animal almost to the point of death, he was resuscitated by the introduction of Normet Solution, four-fifths volume of the blood extracted. The work is striking. The movie was made in Paris and loaned me. We have made some blood studies after using this solution and they tend to corroborate the claims of the introducers of the striking hemapoetic stimulating properties of their solution.

I have had my experience with new remedies and try to be cautious. In this instance others of independence have observed my work, and in several cases they have corroborated my results by their own experience with the solution as furnished them by me.

THE SIGNIFICANCE OF THE SYSTOLIC MURMUR*

GEORGE FAHR, M. D.,
Minneapolis, Minn.

When your secretary invited me to talk before your society, I recalled the number of consultations for systolic murmurs of no significance for the patients' longevity or activities, in which I had participated recently, and I decided that here was a subject of considerable importance to you and one which is not being discussed very much at the present time.

This subject must be of importance to you because it has been estimated, by various observers(1-2-3), that between 40 and 70% of all children between the ages of 6 and 14 years, 35% of otherwise normal individuals in the second decade, 22% in the third decade and 19% of normal individuals in the fourth decade have systolic murmurs. Consultation for the significance of a systolic murmur is very common in my experience. Not a few of these cases have been told that they have a "leakage of the heart" and should avoid strenuous physical activity. Some of them are children who have been kept out of school activities, others are persons who have been seeking life insurance and have not been accepted because of so-called "leakage of the heart" or "mitral insufficiency." Some are adolescents who have been kept out of athletics. Most of them are young persons and all of them are in danger of having the idea of heart disease fixed firmly in their minds and only very rarely is anything wrong with their hearts.

When I talk to my classes on the subject of systolic murmurs of no significance I always begin by telling them the story of my earliest acquaintance with this murmur and its impression upon me. When I was a university undergraduate, there was a young man out for the football squad who could have been used as a model for the typical athlete. He was not only of fine build. but he had life and enthusiasm. No question in anybody's mind but that he would make the team later on. In those days it was necessary for every candidate for the teams to pass a physical examination at the hands of one of the doctors over in the gymnasium. One day this young man did not appear at the training table for dinner. No one had seen him since he left the field for his physical examination. One of the members of the squad was sent up to his room to see if he were there, and if so, to inquire why he wasn't down for dinner. The messenger returned with a report that he undoubtedly was in his room, but would not respond to requests to open the door. Thereupon a young instructor who roomed in the dormitory went up to his room to make inquiries as to the state of affairs. He was greeted by a melancholy voice requesting him to let the freshman in question alone as he wanted to die. Finally gaining entrance to the room he found a very much disheartened young man who told the following story: He had gone to the gymnasium for his physical examination and had been told that he had a loud murmur and a bad "leakage of the heart". This would necessitate his giving up athletics for good. In fact, he was informed that he had a serious heart trouble and must live the life of a semi-invalid in order not to die soon from heart failure. The young man said he preferred to die at once to dragging on a few years as an invalid. The instructor, who was not an M. D., but who had studied physics and besides had common sense, answered by saying that despite his lack of medical knowledge, he didn't think anyone who could run like the young athlete could have much of a leak in his pump. Moreover, if he had to die young, all the more reason why he should live hard the few years alloted to him. This form of reasoning soon prevailed over the stethoscope information and the young man, though not allowed on the team that fall, lived a life far from circumspect and calculated to spare the heart. Of course, nothing happened and the next fall he was allowed to go out for the varsity, made it, and made an excellent name for himself in athletics. Now, twenty-five years after the stethoscope diagnosis, he is hale and hearty with no signs of heart failure. Another of my college friends had a nearly similar experience excepting that his leak was said to be very slight so that athletics might possibly strengthen the heart and compensate for the lesion or might possibly also bring about heart failure. The young doctor did not know whether it was best to take up athletics or better to avoid them. My friend, placed before the dilemma, chose the athletic kill or cure plan. He became a first class track athlete, ran also for Oxford University as a Rhodes Scholar and is living well and hearty today, twenty-five years after the diagnosis of leakage of the heart was made.

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*From the Department of Medicine, University of Minnesota. Address delivered before the Nebraska State Medical Association, May, 1930.

I could multiply such incidents many, many times and spend the morning telling stories of patients with diagnoses of mitral insufficiency who outlived their doctors. Thus, even before I studied medicine I had begun to form an opinion which was very much like Graham Steele's aphorism, "Nobody ever dies of mitral insufficiency alone."

Let us see what illumination of the problem can be obtained from a study of the mode of production of systolic murmurs in the cardiovascular system. The sounds which are produced in a tube when a fluid flows through it are dependent upon vibrations set up in the walls of the tube by movements of the fluid. The rigidity and thickness of the walls of the tube determine the ease with which murmurs are developed. Rigid walls and thick walls make it more difficult for sounds to be heard because under the same circumstances of flow the excursion of rigid walls or of thick walls is less extensive than the excursion of less rigid walls or thin walls and the intensity of a sound is directly proportional to the square of the amplitude of vibration. Vibrations in the walls of the vascular channels are developed by moving fluid columns only when the motion of the fluid particles becomes "turbulent", i. e., when the particles no longer flow in parallel stream lines, but in sinuous paths or eddies. One of the commonest conditions for turbulent motion in a fluid column is an increase in velocity beyond the so-called "critical velocity"(4).

The "critical velocity" is defined as that velocity of flow in a pipe with parallel walls beyond which velocity the flow is no longer steady in parallel stream lines but becomes "turbulent" or unsteady. In other words, increase in velocity beyond the "critical" alone will cause a murmur to be heard in the large vessels. Another very common condition for turbulency in a moving column of fluid is the abrupt passage of the fluid from a narrow cross section to a much wider one. In the latter case, the turbulent motion with eddy formation is found just a little way beyond the beginning of the wider part of the channel. Less common conditions for the formation of sounds in moving columns of fluid are vibrating strings and sheets projecting into the fluid channels, sharp edges against which the flow is directed and an abrupt and marked diminution in cross section of the channel. Insofar as the heart murmurs are concerned the latter conditions are only infrequently the cause of murmurs and we shall not consider them further.

I have calculated from Reynold's formula for "critical velocity" in a fluid that the blood entering the aorta and pulmonary artery is not far from the critical velocity and I have confirmed the calculation by observations on blood flowing from the aorta into a glass cannula in a Starling heart lung preparation. Here one can very easily see turbulent motion when it occurs in the glass tube. Any considerable increase in velocity determines definite turbulent movement within the glass tubing. If then the minute volume from the normal heart increases decidedly, we should expect murmurs to be produced and as the greatest velocity is found during systole, we should expect these murmurs to be largely systolic. Murmurs must also be produced if the viscosity of the blood decreases, for with this condition the linear velocity increases, and the viscosity in itself is a factor reducing the "critical velocity", according to Reynold's formula. Therefore, in anemia and in conditions of excitement with increased blood flow or during exercise, or in fevers, murmurs may result in cases where there are otherwise no murmurs present. In fact, one conversant with Reynold's work on critical velocity is not astonished to find murmurs fairly frequently present in a normal cardiovascular system, but is more apt to be astonished that they are not more frequently present. If the aorta or pulmonary artery are slightly pressed upon, thus forming a narrower cross section in the channel, or if the vessel widens somewhat beyond the valve, one would expect to find murmurs frequently produced beyond the narrowing.

Thayer and MacCallum(5) have shown experimentally on dogs that systolic murmurs are very easily produced at the pulmonary orifice by slight pressure of the stethoscope on the thin walled conus. Bleeding and subsequent transfusion of salt solution also tended to produce systolic murmurs. In conditions leading to high pulse pressure and abrupt cardiac contraction they also heard systolic murmurs over the pulmonary orifice. They found the same conditions for murmur formation to be present at the aortic orifice.

Moreover, it is not improbable that normal mitral sails occasionally do not close sufficiently tight in systole to preclude some slight flow between them. A very small leakage through the mitral valve could give a very loud systolic murmur. In fact, very large leaks frequently give only very faint soft murmurs and very small leaks frequently give very loud murmurs of rough or musical quality. Whenever this is the case a murmur, systolic in time, will be heard. When the heart contracts, air must be aspirated into the neighboring air sacs and if the amount of air is sufficient in quantity and other conditions are propitious, a respiratory murmur, systolic in time, must not infrequently be produced. Therefore, we should expect to find systolic murmurs of not infrequent occurrence in normal hearts, and the high figures for the incidence of systolic murmurs confirms this expectation.

The most frequent source of systolic murmurs of no significance for the longevity or activities of the possessor is due to turbulence in the blood stream of the pulmonary artery.

It is most common among children and young adults because of the slight rigidity and thinness of the wall of the artery in childhood and early adult life and also because the topographical relations of the *conus pulmonalis* and pulmonary artery to the thoracic cage are somewhat different in children than in adults. During childhood, after the third year, and up to the 20th year of life, the chest wall is relatively flat after which it increases relatively in anterio posterior diameter. During this period of the relatively flat chest and thin slightly rigid walls of the artery this murmur is most common, being heard in about 20% of all individuals.

Hoemisch and Querner(6) have shown that there is very little lung tissue between the pulmonary artery and the thorax wall in adults with loud systolic murmurs over the pulmonary artery. In these cases the pulmonary arch approaches the thorax wall during systole and may be flattened some.

Falkenhausen(7) has shown by frontal fluroscopy and plating that those having systolic murmurs at the pulmonic area have a pulmonary conus right behind the sternum in expiration and only very little lung between the sternum and the vessels in inspiration. In other words the pulmonary artery is close behind the thorax in these cases. Individuals showing considerable clear lung field between the heart and the front of the thorax in exspiration never developed systolic murmurs over the pulmonic area even when exercised severely. Therefore, it seems plausible that some individuals may have a slight relative stenosis of their pulmonary artery which tends to cause a systolic murmur especially when the wall of the artery is thin and distensible as in childhood and youth. The conditions for murmur formation are ideal here; nearly critical velocity, thin walls of slight rigidity, and slight pressure on the artery and nearness to the thoracic surface so that conduction of sound is good. It is even possible that stenosis is not necessary for systolic murmur formation. Velocity near the critical with slight widening of the artery just beyond the valve coupled with thin walls and slight sound dampening effect may be sufficient for audible murmur formation. In all these cases the pulmonic closure sound is loud, often very loud because there is very little or no intervening lung tissue to absorb the sound waves on their way to the thoracic wall and the stethoscope. Frequently the pulsation of the pulmonary artery can be seen in the 2nd left interspace and it will be frequently observed that the chest in this area is exceptionally flat. This murmur is usually loudest over the 2nd or 3rd left interspace. It may be transmitted to the apex. It is usually best heard in recumbency and is louder during exspiration than during inspiration for very obvious reasons. In fact, the change in intensity with change in phase of respiration is more pronounced in this murmur than in any other and is very characteristic.

It is very easy, as a rule, to decide as to the significance of a systolic murmur heard with greatest intensity in the 2nd or 3rd left interspace and accompanied by a loud second sound for it is only necessary to rule out a congenital heart lesion, a pulmonary stenosis with or without septal defect, or a patient ductus arteriosus. A congenital heart lesion of any consequence is accompanied by cyanosis and a careful orthodiagraphic or teleroentgenographic examination shows a bulging of the heart shadows in the conus pulmonalis and pulmonary artery area and a displacement of the right auricular border to the right. Congenital heart disease is rare and a systolic murmur of no pathological significance in the second and third left interspaces near the sternum is very common. In other words these murmurs are to be considered of no pathological significance until proved as being due to a congenital lesion with consequent alteration in the shape of the heart and the clinical signs of this lesion. The accentuation of the second sound as heard in the second interspace is due to nearness of the pulmonary artery to the thorax wall and the diminution in amount of lung tissue between the thorax wall and the pulmonary artery and has no other significance.

Systolic murmurs of no significance for longevity and activity appear not so very infrequently over the second right interspace in young persons and also in older persons. In younger persons it seems probable that the factors of slight rigidity of the aortic wall and, therefore, ease of vibration coupled with increased stroke output and velocity of flow of blood are responsible for the murmurs. Perhaps there is a slight relative dilatation of the aorta beyond the aortic valve in these cases thus increasing the tendency for turbulent flow and murmur formation. During the excitement of army examinations this systolic murmur was fairly frequently heard. In older persons, senile ectasia of the aorta beyond the valves is a factor tending to favor turbulent flow and murmur formation. It is during systole only that velocity of flow is significant in the aorta and, therefore, this murmur can only be expected in systole. It is only necessary to rule out aortic stenosis in order to prove that a systolic murmur heard most loudly over the second right interspace is of no pathological significance. The diastolic murmur of aortic insufficiency will be heard along the left sternal border if the aortic stenosis is accompanied by aortic insufficiency. If this latter is absent, the aortic stenosis will produce the characteristic slowly rising and falling "pulsus tardus" and will be accompanied by a reduced pulse pressure. There will nearly always be a systolic thrill over the right second interspace near the sternum or over the upper sternum in aortic stenosis and the second aortic sound will be reduced in intensity. These signs make the differentiation of aortic stenosis from systolic murmur of no pathological significance practically certain even where the x-ray does not give unequivocal evidence of dilatation of the left ventricle in early stages of aortic stenosis. A senile ectasia or luetic aneurysm of the ascending aorta, both of which lead to systolic murmurs over the aortic area, can be determined by x-ray examination and thus easily ruled in or out of consideration.

Systolic murmurs of no pathological significance are frequently heard at or inside the apex of the heart and may or may not be of significance for life expectancy and physical activity. Some of these are merely cardiorespiratory, i. e., systolic inspiratory, due to aspiration of air into the air sacs of the lung near the heart during the period of contraction of the heart. The contraction of the heart reduces the intrathoracic pressure near it, the air sacs in the neighborhood expand and air rushes in from the bronchi, causing an inspiratory breath sound. These murmurs are usually loudest when the patient is inspiring and are also heard a short time after the onset of systole. This murmur is most frequently heard during inspiration or is increased in intensity during inspiration, though it is not ruled out if heard also in exspiration or during respiratory pause for air can pass from other alveoli and the bronchi into the air sacs near the heart when respiration ceases, but the heart contracts. The true cardiorespiratory murmur is soft and resembles the inspiratory breath sound. Some of the apical systolic murmurs are simply the transmitted systolic murmurs which have arisen in the pulmonary artery. In this case we hear the murmur usually even louder over the second and third left interspaces. There is no plausible explanation for some of the apical systolic murmurs. They may be lound and rough but there is no demonstrable change in the size and shape of the heart accompanying them and the possessor goes on for years without a sign of impairment of cardiac function. Some of these cases have come to autopsy and nothing explanatory of the murmur has been found.

When one or more bouts of rheumatic fever have preceeded the discovery of apical systolic murmurs then judgement as to their significance must be reserved for a time. If no diastolic murmur appears during a period of a year or two following the last attack of rheumatic fever and if the size and shape of the heart has not changed characteristically within this period, we are fairly safe in saying the apical systolic murmur is probably of no significance for the longevity and future activities of the patient even though there may have been a rheumatic valvulitis present in the mitral valve previously and even though the possibility of a very mild degree of mitral incompetence cannot be ruled out. One must also be sure of ones ability to pick up the very faint diastolic murmurs heard in the early stages of mitral stenosis and very moderate degrees of stenosis. They are often very soft, heard only early in diastole during the period of most rapid filling of the left ventricle. They are usually heard best inside the apex, though sometimes transmission to apex or beyond is better and sometimes they are heard in the 3rd and 4th interspaces not far from the sternum and, therefore, suggestive of aortic insufficiency.

The only accurate method of determining small differences in size and shape of the heart is the x-ray method and should always be resorted to when the physician is in doubt as to the pathological significance of a murmur. Either an orthodiagram or a plate taken at a distance of six feet will determine changes in shape and size of the frontal projection of the heart. A mitral lesion of significant size causes an enlargement of the left auricle and right ventricle and a mitral insufficiency ultimately causes a dilatation of the left ventricle if the leak is going to be of importance in reducing the patient's expectancy and in reducing his future physical activities. The bulge in the frontal projection of the heart in the second and third left interspaces due to enlargement of the conus area of the right ventricle and pushing out of the border of the pulmonary artery is especially characteristic of mitral disease. One should hesitate to make the diagnosis of mitral regurgitation if this characteristic x-ray evidence is lacking. Enlargement of the left auricle is best shown by its pressure on the lower part of the oesophagus. To demonstrate this, the patient is placed in lateral position before the fluroscopic screen with his hands over his head and the descent of a mouthful of barium meal through the oesophagus is observed on the fluroscopic screen. Even when the left auricle is only very slightly enlarged it usually presses the lower end of the barium filled oesophagus back towards the spine in such a way as to be easily demonstrated(8).

One should be very cautious in diagnosing mitral incompetence if there is no evidence of left auricular pressure upon the oesophagus in its lower six centimeters and if there is no bulging of the heart silhouette in the 2nd and third interspace region. In my experience changes in size and shape of the heart usually can be found before unequivocal clinical symptoms of heart failure develop. I have followed cases of severe hypertension for years and have found that the left ventricle will often dilate considerably before the vital capacity is reduced definitely and dyspnea develops on exertion. So also I have many cases of mitral stenosis with no symptoms of dyspnea except on severe exertion and then no greater than in normal persons of the same degree of training, but with x-ray evidence of size and characteristic change in shape of the heart and slight pressure of the dilated left auricle upon the barium filled oesophagus.

It is well to remember when pondering the diagnosis of mitral insufficiency that mitral regurgitation of valvular origin is rare without some mitral stenosis. Therefore hesitate to make the diagnosis of mitral leak if the physical signs of mitral stenosis are not present and if there is no evidence on x-ray examination that the right heart is enlarged or the left auricle is dilated. Of course the systolic murmur may be due to a relative leak if the left ventricle is decidedly enlarged, but this condition rarely causes great diagnostic difficulty because the heart is definitely dilated and a dilated heart means heart muscle failure. One will certainly go wrong exceedingly rarely if one turns down the diagnosis of mitral insufficiency in a case where an apical systolic murmur is present but in which there is no diastolic murmur of mitral stenosis or aortic insufficiency, no evidence of dilation of the left auricle in the oesophagogram, no evidence of right heart dilation in the frontal x-ray projection of the heart especially in the pulmonary conus area and provided sufficient time has elapsed since an attack of rheumatic fever for the signs of stenosis of the mitral to become evident. At least one year and better two years are necessary before one can be fairly certain that no signs of mitral stenosis are going to appear. Moreover it is always well to examine these hearts after giving amyl nitrite in order to bring out a presystolic or diastolic murmur for, as you all know, a presystolic murmur may not be heard if the stroke output of the heart is very low, but will appear after amyl nitrite or exercise have produced an increase in stroke output of the heart.

I have said nothing about dyspnoea as a factor in determining the significance of a murmur because dyspnea itself must be carefully analyzed. Some patients complain of shortness of breath on exertion who have neither heart nor lung pathology. Even if one observes bona fide dyspnea with one own eyes, there need not necessarily be pathology in heart or lung. The "effort syndrome'' cases often show systolic murmurs at apex or base. But the dyspnea of the "effort syndrome" case or case of neuro-circulatory asthenia is not accompanied by a marked reduction of vital capacity. The dyspnea of heart failure is accompanied by a reduction of vital capacity of at least 20% from the mean normal for the sex, height and age. By vital capacity measurements we can check up the significance of a history of shortness of breath on exertion. Moreover, as a rule, changes in size and shape of the heart are found before dyspnea is noticed and we should make the diagnosis before dyspnea is noticed provided the patient comes to us in the earlier stage.

Making use of the x-ray methods, the physical examination for diastolic murmurs, the physical examination of the pulse. and the measurement of vital capacity it is usually possible to arrive at an accurate judgment of the significance of a systolic murmur, though it must be said that the determination of the significance of a systolic murmur may be one of the moderately difficult diagnostic problems of internal medicine in certain cases.

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THE ASCHHEIM-ZONDEK TEST FOR PREGNANCY*

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Because of many requests and inquiries from doctors concerning the Aschheim-Zondek test for pregnancy, this article is written discussing the technique of the test and the practicability of the same. Quite an enormous literature has accumulated concerning this rather new procedure and we have abstracts of 40 articles which have recently appeared—references to some of which will be made.

In 1927 Zondek and Aschheim discovered that the urine of pregnant women contained large quantities of follicular (ovarian) hormone. In the same year these two investigators apparently demonstrated that the phenomenon of ovulation is in a large measure controlled by the secretion of the anterior lobe of the pituitary gland. The question of how the pituitary gland functions as it does, remains for the present unanswered. Zondek and Aschheim likewise discovered that in early pregnancy a hormone, apparently from the anterior lobe of the pituitary, is so freely formed in the mother's system, that it is actually present in the urine in recognizable quantity, and upon the basis of this observation, they have elaborated what promises to be a very valuable and more or less practical diagnostic test of the existence of early pregnancy.

The authors list the salient phenomenon of their test as follows:

1. The Aschheim-Zondek test for pregnancy is a biologic test.

2. It is in the ovary of the immature (3 week old—12 gram. mouse) that we study for our pregnancy test, not in the vagina or the uterus.

3. The immature mouse ovary contains only primordial follicles and small graafian follicles without cavities.

4. The test consists in injecting the morning urine of a pregnant woman into the immature mouse and because of the hormone of the anterior lobe of the hypophysis which this urine contains, there is first:

(1) Growth of the follicles leading to rupture and discharge of ova into the tubes.

(2) There occur hemorrhages into many of the enlarged follicles which are visible to the naked eye as cyanotic dots.

(3) Finally atretic corpora lutea are formed in the ovary by luteinization of follicles which have not fully matured.

5. This excretion of hypophyseal hormone in the urine of the pregnant woman forms the basis for the Aschheim-Zondek pregnancy test. This hormone is also found present in the

(1) Decidua.
(2) Corpus luteum.
(3) Placenta.
(4) Amniotic fluid.
(5) Young embryo, and
(6) In the blood serum in large quantities.

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*NOTE—This work was made possible through the courtesy of the Anatomy Department of the University of Nebraska, who furnished a colony of fifty adult mice for breeding purposes. Sincere appreciation is expressed to Drs. W. A. Willard and J. S. Latta and their excellent technicians for their valued assistance in conducting this investigation.

Aschheim and Zondek describe their technique and results as follows:

1. The first morning specimen of urine, before any intake of food or fluid is more concentrated than day specimens and should be used for injection.

2. Five infantile mice are used for each test. The mice are weighed before the test. The injections are made subcutaneously, laterally in the back. A tuberculin syringe is used. Care must be taken not to enter the pleural or peritoneal cavities with the needle, or immediate death will result.

3. The mice receive 6 injections; 3 on the 1st day and 3 on the 2nd.

4. Single doses are:
   0.2 cc. for mouse No. 1.
   0.25 cc. for mouse No. 2.
   0.3 cc. for mouse No. 3 and for mouse No. 4.
   0.4 cc. for mouse No. 5.

5. 100 hours after the first injection the mice are killed by illuminating gas and laparotomized.

6. The reading is done by inspection of the ovaries with the naked eye and with a hand lens.

(1) The ovaries of untreated infantile mice are pale greyish pink and hardly the size of a pinhead. If the ovaries have this appearance, the test is negative, for pregnancy regardless of the uterus.

(2) The ovaries of mice after injection of urine from pregnant women are twice or three times larger, and distinctly red, presenting submiliary yellowish protrusions which correspond to the corpora lutea, or cyanotic protrusions which are due to hemorrhage into a follicle or corpus luteum.

Positive reaction.

(3) The microscopic finding of even one single corpus luteum renders the test positive. Serial sections may be made of the ovaries after they are fixed in Zenker's solution and imbedded in paraffin.

7. Of 238 urine specimens from pregnant women during the first 8 weeks of pregnancy—233 gave a positive test. That means an accuracy of nearly 98%. Several times the test was found positive as early as 3-5 days after the date of the expected menstruation.

This is a very good result in a biologic method, in view of the fact that an universally applied test like the Wassermann reaction yields not more than 94-95% of correct results.

8. The reaction becomes negative about the 8th day after delivery. It remains positive as long as living placental tissue is in biologic contact with the maternal blood.

9. The urine of patients with hydatidiform mole gives a very strongly positive reaction, and since there is no embryo in this condition, it must be the living tissue of the mole is responsible for the positive reaction.

A summary of these authors' findings is as follows:

1. Pregnant women excrete large amounts of hypophyseal hormone with the urine.

2. Injection of urine from a pregnant woman into infantile mice leads to formation of corpora lutea and to hemorrhages in the ovary.

3. This reaction (Aschheim-Zondek test) is positive in 98 per cent of the cases of pregnancy.

4. The technic of the test is described in detail.

5. Demonstration of hypophyseal hormone in the urine is a reliable method for the diagnosis of pregnancy.

6. In ectopic gestation and in abortion the test is positive as long as living fetal tissue is in biologic contact with the blood of the mother.

7. The test has been found strongly positive in hydatidiform mole and in chorionepithelioma(1).

Review of all available literature shows there are some 3,159 cases where the pregnancy test has been done with positive results of from 95-98%. Brouha, Hinglais and Simmonest(2) found that the urine of pregnant women contains the hormone of the anterior lobe of the pituitary after the 15th day of pregnancy and that after the 3rd month of pregnancy it also contains folliculin. Stal(3) concludes that the Aschheim-Zondek test is reliable if the pregnancy has existed more than 4 weeks, the proportion of accuracy, 98%, surpassing all other tests. Kaplan's(4) study of the test convinces him that it permits making a diagnosis of pregnancy before physical examination is positive, thereby differentiating the pregnant uterus from the slightly enlarged non-pregnant uterus. The earliest case of pregnancy examined was a woman whose menstrual period was 7 days over-due. There were several other women in the first 3 weeks of gestation, all of whom showed a positive test.

THE TECHNIQUE USED IN PRESENT STUDY

To carry out this test we found it practically impossible to use 5 mice for each specimen of urine because of the difficulty of raising so many immature females, 3 to 5 weeks old, weighing 6-10 grams. From Jan., 1930, to September, we raised 118 young mice, 97 of which lived, out of which we had 44 females suitable for use in the Aschheim-Zondek test. We used only one mouse for each test, injecting 0.2 cc. of urine twice a day for 3 days (6 injections in all)—killing the mice on the 5th day, and reading the reactions in the ovaries when the mice were autopsied. Microscopic sections were also made of all the ovaries from experimental animals.

After the uterus and ovaries were dissected from the animal, the organs were hardened in picro-acetic-formol and run up through the various alcohols; 70, 80, 85, 95, and 100%. The specimens were cleared in xylene or cedar oil and imbedded in paraffin. The microscopic sections were cut at a thickness of 10 microns and stained with eosin—methylene blue or hematoxlyn-picrofuschin. The sections were then ready for microscopic study to detect the presence of anyone of the three characteristic reactions. All the sections of the ovaries from mice which had been injected with the urine of pregnant patients showed one of these 3 reactions and the sections of the control animals showed the absence of the same.

Ashheim and Zondek distinguished three re-

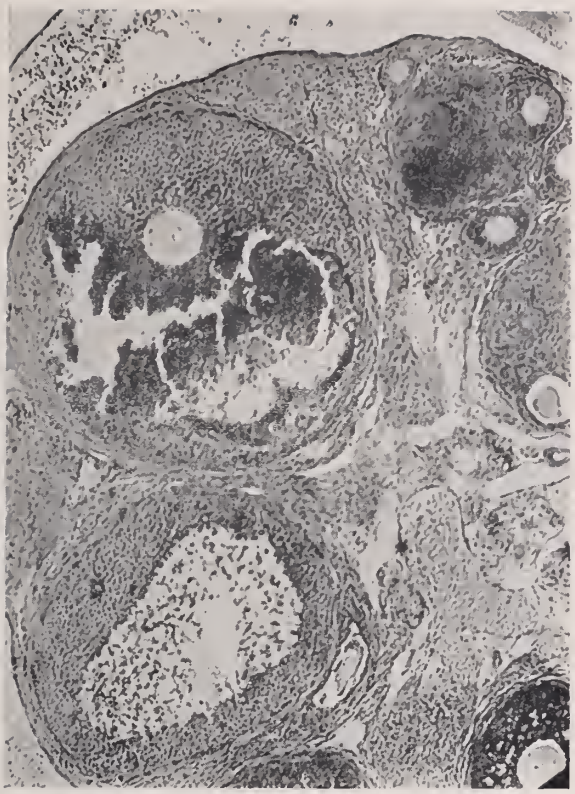

Fig. 1

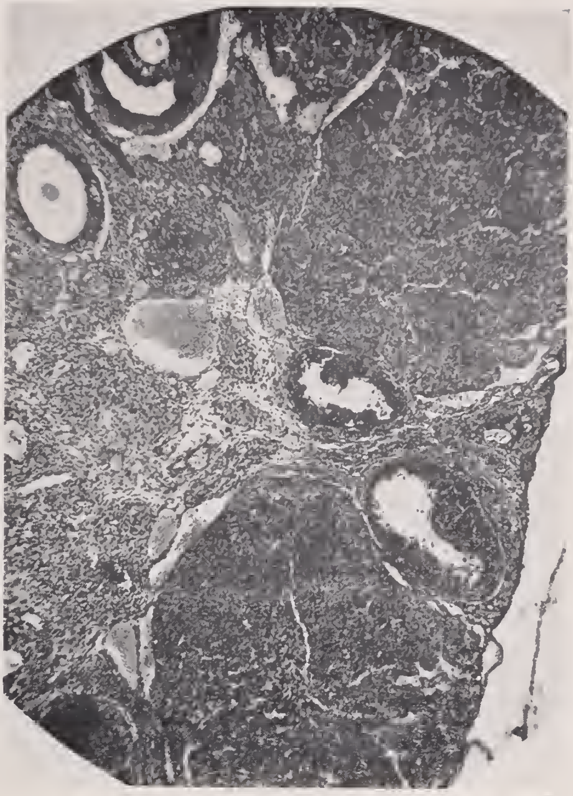

Fig. 2

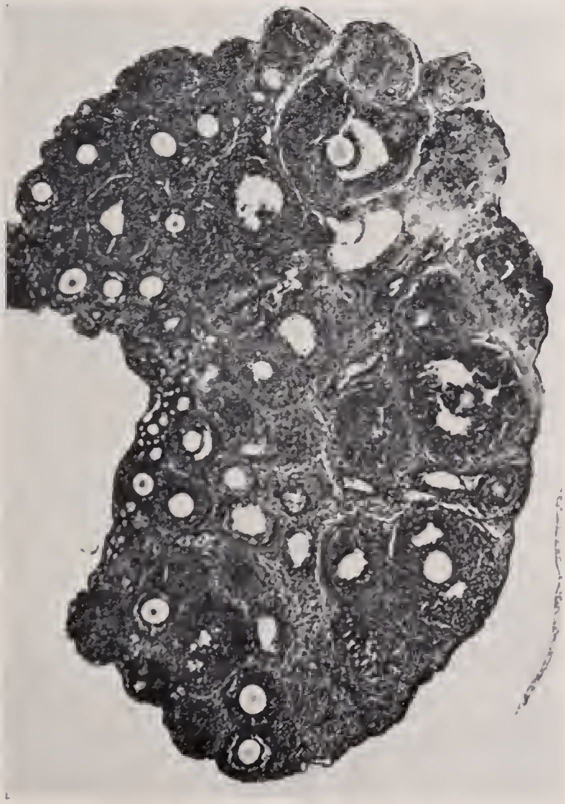

Fig. 3

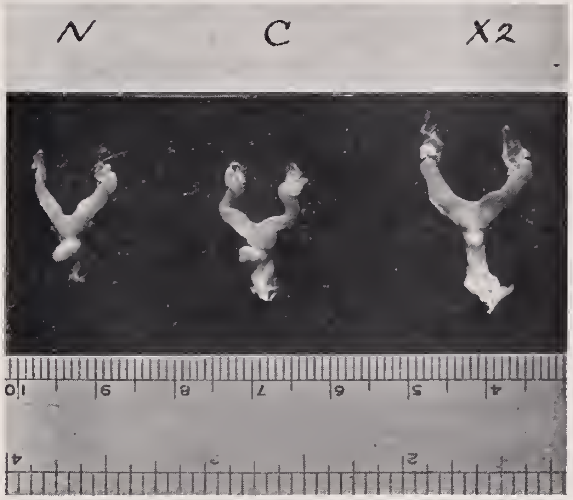

Fig. 4

Fig. 1. Illustrating Reaction II. "Blood spots" or "Blut Punkte" in the cavity of the mature graafian follicles. The cumulus oophorus or discus proligerus is also well shown.

Fig. 2. Illustrating Reaction III. Luteinization of follicles.

Fig. 3. Illustrating the normal ovary from a 3 weeks' old immature mouse showing the primordial follicles.

Fig. 4. Specimens of uteri from litter mates. (N)—Normal animal not injected. (C)—Animal injected with urine from a male. (X2)—Animal injected with urine from a pregnant patient.

actions produced in the ovaries of immature mice after the injection of urine obtained from cases of pregnancy which are identical with those seen after the implantation of anterior lobe tissue and are recognizable at the end of 100 hours.

Reaction I. Premature ripening of follicles; ovulation; oestrus.

Reaction II. "Blood spots" (hemorrhagic follicles). (Fig. I). The hyperaemic ovary with greatly dilated blood vessels shows massive hemorrhages within the cavity of mature, partially luteinized follicles. This characteristic reaction is recognizable macroscopically by brown elevations the size of a pinhead which give the ovary a mulberry appearance.

Reaction III. Luteinization of follicles. Formation of corpora lutea atretica. (See figure II).

For the diagnosis of pregnancy the presence of reaction 1 alone must be considered negative or, at the most suggestive; whereas reaction 2 or 3 is diagnostic.

We then have microscopic sections from 41 animals showing the results of this test. The illustration (Fig. 1) showing the large "blut punkte" in a graafian follicle is from this series of positive tests. The other picture (Fig. 2) showing the luteinization reaction in the ovary of an injected animal is also from this series. We used only the urine from known pregnant patients from the clinic for the injections. The third illustration (Fig. 3) is that of a normal ovary of an immature female mouse which does not show any of the characteristic reactions of the test.

As controls for our series of pregnancy tests, we always injected one mouse in each series (total controls—No. 11), with urine from a male or from a normal non-pregnant female so that we would have sections of that ovary for comparison in our study of the ovaries from mice injected with the urine from pregnant patients. It was always evident at autopsy, even macroscopically that the ovaries of these control animals were smaller, less hyperaemic, and never showed the "blood spots" that were seen in the mice injected with urine from pregnant patients. The horns of the uteri of mice injected with urine from pregnant patients were always greatly hypertrophied and more hyperaemic than those of the control animals. Fig 4, will illustrate this nicely *in specimens of uteri from litter mates*; the first being a uterus from a normal animal (N), the second a uterus from a control animal injected with urine from a male (C), the third a uterus from an animal injected with a pregnant patient's urine (X2). Aschheim and Zondek warn against accepting these changes in size of the uterus as indications of a positive diagnosis of pregnancy.

It can be seen then that this test is simple enough if one is located in a medical center provided with a large enough colony of experimental animals, mice in this instance, where a constant supply of 3 weeks old animals would be available. It might be interesting to note that over 10,000 immature female mice were used by Aschheim and Zondek in the elaboration of this test.

If there were enough demand for such study, a laboratory could be equipped to run these tests similar to the "Pregnancy Diagnosis Station" which was instituted in Edinburgh in 1929 by Prof. F. E. E. Crew of the Department of Animal Genetics. Here they have dealt with 907 cases where doctors have sent in specimens of urine for study. There were 9 cases of misdiagnosis. giving an error of 1.88 per cent. It will be seen, then, that this test, with an accuracy of over 98%, is essentially useful for the early diagnosis of pregnancy. It may also be applied in the detection of any active product of conception, and this has been exemplified by showing that positive result may be obtained in cases of:

1. Incomplete abortion.
2. Retained active products later in pregnancy.
3. Hydatidiform mole.
4. Chorionephithelioma.

Thus it becomes apparent that the Aschheim-Zondek reaction should not be regarded as a test for the presence of a living foetus, but as indicative of the presence of active placental tissue or derivative, thereof. It is a placental sign, rather than a pregnancy test.

Robertson(6) points out that hydatidiform mole and chorion epithelioma have all given positive results (only 14 cases in the literature). This shows that it may be of use to carry out the test at intervals after the detection of hydatidiform mole or chorionepithelioma, in order that the effect of operation or treatment may be controlled. Until the test becomes negative, one could conclude that there were fragments present which should be removed. We have had none of these cases to collect urine from, but feel that in these instances the test would be of great value, as heretofore, we have never had any definite criterion by which to judge whether a hydatidiform mole had been thoroughly evacuated from the uterus or whether a chorionepithelioma might be developing.

CONCLUSIONS

The Aschheim-Zonek test is a biologic test with an accuracy of 98%—more accurate than a similar widely used biologic test, namely the Wasserman reaction.

It can only be used in a medical center provided with a large colony of experimental animals, mice in this instance, where a constant supply of 3 weeks old animals would be available.

The test is simple enough and the results of the test could be determined in 100 hours—about 5 days after the specimen of urine was collected.

Commercially speaking, the test could not be done for much less than $15.00, which would probably be too expensive to make it very popular, when it is realized that in waiting a month longer, most physicians can ascertain whether or not the patient is pregnant by a simple bimanual examination.

In our opinion its greatest value would be in the cases of hydatidiform mole and chorion spithelioma to determine whether or not an hysterectomy should be performed in a give case.

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CORONARY THROMBOSIS—A REVIEW OF AUTOPSY FINDINGS*

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Sclerosis of the coronary arteries in a degree sufficient to suggest its role in producing heart pathology is a common localization of arteriosclerosis. As in certain other localities such as the cerebrum, the kidney and the aorta, the degree of change in these important arteries is not predictable from the condition of the peripheral arteries nor the height of arterial tension. If careful search be made, other portions of the arterial tree can, as a rule, be found to be involved, but the amount of this involvement can not be used as a guide in the diagnosis of coronary disease.

The frequency of thrombosis, or better, occlusion, of the coronaries seems to be increasing, yet I have the feeling the we have had our attention called to it by the increasing numbers of articles in the literature and have learned to separate it from a group of cases of heart pain previously covered by the term angina pectoris. Consequently, the increased frequency may be that of the diagnosis rather than the disease. For instance, many of a large group of cases of sudden death that have often been attributed to "acute indigestion", probably because of epigastric pain, we know are cases of coronary thrombosis for we have had the opportunity of seeing a number of these at the postmortem table.

In looking through the older literature one finds but little reference to the coronary arteries as important in the production of heart pathology. For example Hollowell(2) in 1835 read before the Medical Society of Philadelphia a very fine paper on "Rupture of the Heart". He has collected in addition to his own cases, a large number of published cases. The descriptions, both of clinical and autopsy findings, leave little doubt that many of them were due to coronary disease yet the coronaries were not mentioned and no suggestion is made of this as a possible cause of the pathology.

John Thurnam(3) in 1838 read a lengthy and detailed paper on "Aneurisms of the Heart" in which he collects a large number of instances in addition to his own cases and well defines the term, excluding dilatations which had previously been included in this class. In many cases the findings clinically and at autopsy are very suggestive that coronary occlusion was the initial lesion, yet he does not mention these arteries.

In "Diseases of the Heart" by Austin Flint(4) published in 1858, as far as I can find, only one reference is made to the coronary arteries and this is one sentence in the discussion of angina pectoris. Thus we can see that coronary disease was probably far from infrequent a hundred years ago yet it went unrecognized, not only clinically but at autopsy as well.

The coronary arteries (Figs. 1 and 2) form the chief, though not the sole source of blood supply to the heart muscle. The right arises from the aorta in the right aortic sinus, passes along the right coronary sulcus between the auricle and ventricle to the diaphramatic surface of the heart where it turns toward the apex, passing along the interventricular groove as far as the point of the heart. It supplies the right auricle and the larger part of the right ventricle, a narrow strip along the posterior wall of the left ventricle and the posterior half of the septum. The left coronary arises from the left aortic sinus, passes downward and forward along the left coronary sulcus. It quickly divides into the circumflex and anterior descending branches. The former proceeds along the coronary sulcus to the posterior aspect of the heart and supplies chiefly the auricle and upper portion of the wall of the left ventricle. The descending ramus turns downward along the anterior interventricular sulcus to the *incisura apicis cordis*. It supplies the greater part of the left ventricle, especially the apex, anterior and left lateral portions and also the anterior portion of the right ventricular wall and anterior half of the interventricular septum. Several other anatomical factors enter into the heart's circulation but this much suffices for our purpose.

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*Read before annual meeting, Nebraska State Medical Association, Lincoln, May 13-15, 1930.

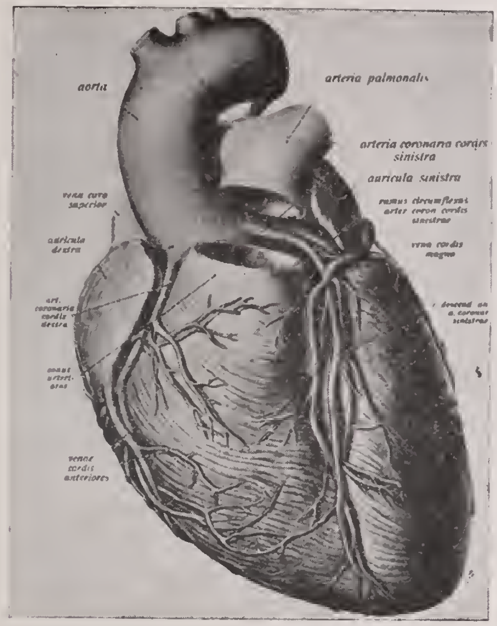
aorta
arteria palmonalis
arteria coronaria cordis sinistra
auricula sinistra
vena cava superior
ramus circumflexus arter. coron. cordis sinistrae
auricula dextra
vena cordis magna
art. coronaria cordis dextra
descend. an a. coronar. sinistrae
conus arteriosus
venae cordis anteriores

Fig. 1. Anterior view of heart showing coronary circulation (from Sabotta).

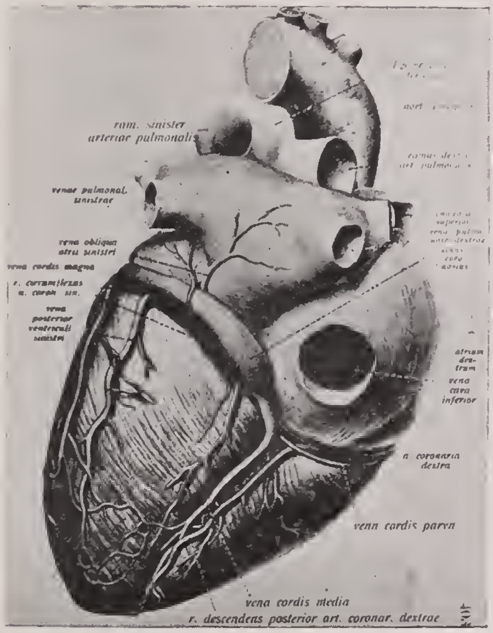
ram. sinister arteriae pulmonalis
venae pulmonal. sinistrae
vena obliqua atrii sinistri
vena cordis magna
r. circumflexus a. coron. sin.
vena posterior ventriculi sinistri
atrium dextrum
vena cava inferior
a. coronaria dextra
vena cordis parva
vena cordis media
r. descendens posterior art. coronar. dextrae

Fig. 2. Posterior view of heart showing coronary circulation (from Sabotta).

A review of a group of 284 postmortems which we have performed reveals some interesting information concerning coronary artery disease and occlusion. This group included individuals of all ages from stillborn infants to the very aged and both sexes.

Amongst these 284 autopsies (See Table I) 41 or 14.4% were found to have appreciable coronary disease. 19 of the 41 had occlusion of some major portion of one or both coronary arteries which was totally or partially responsible for death. One of the 19 was syphilitic and the occlusive pathology was limited to the mouths of both coronaries, the vessels themselves being healthy. It was, in other words a by-product of syphilitic aortitis. This case will not be further considered in this paper.

TABLE I

	NO.	%
Total Autopsies	284	—
Cases with coronary disease	41	14.4
(One due to syphilis excluded and not considered in the further statistics).		
Of the 40 cases:		
Cases without actual occlusion	22	55
Cases with coronary occlusion	18	45
Females	8	20
Males	32	80
Of the 18 cases showing occlusion:		
Females	3	16.6
Males	15	83.4
Levine's series of 145 cases:		
Females	34	23.4
Males	111	76.6
Of the 22 cases not showing occlusion:		
Females	5	22.7
Males	17	77 3

The remaining twenty-two had considerably more arteriosclerotic change in the coronary arteries than should be expected at their ages but apparently with little or no effect in relation to symptoms or death.

The distribution according to sex (Table I) is interesting. Of the total 40 cases 8 were females and 32 males or 20 and 80% respectively. Of the cases of occlusion 3 were females and 15 males or 16.6 and 83.4% respectively. This is a somewhat lower incidence in females than that given by Samuel Levine(1) who reports 145 cases of whom 34 or 23.4% were females.

Of the non-occluded cases of marked coronary sclerosis, 22 in number 5 were females, or 22.7%. These figures bear out the known fact that the male sex is very much more suseptible to coronary disease than the female.

The ages (Table II) of 17 of the 18 cases of occlusion were recorded. Two were in the 5th decade, 42 and 44 years old. Eight were in the sixth decade varying from 50 to 59 years. Five were in the seventh decade from 60 to 69. Two occured past 70, one at 73 and one at 75. 76.4% therefore died between the ages of 50 and 70 years. Levine(1) reports 68.3% in this age period. We had no cases under 40 nor over 75 years old. The average was 59.3 years. The average age of Levine's 145 cases was 57.8 years.

TABLE II

	NO.	%
Age incidence in cases with occlusion:		
40-49	2	11.8
50-59	8	47.0
60-69	5	29.4
70-79	2	11.8
(One case age not recorded).		
50-79	13	76.4
Levine's Series this age period(1)		68.3
Average age this series	59.3 year	
Average age Levine's cases(1)	57.8 year	

TABLE III

RELATION CORONARY DISEASE TO GENERAL ARTERIOSCLEROSIS

	NO.	%
18 cases with occlusion:		
No other arteriosclerosis	4	22.2
Generalized arteriosclerosis	12	66.6
Sclerosis of Aorta	2	11.2
22 cases without occlusion:		
No other arteriosclerosis	6	27.2
Generalized arteriosclerosis	8	36.4
Sclerosis of Aorta	8	36.4
Of all 40 cases:		
No other arteriosclerosis	10	25

The relationship between coronary sclerosis and arteriosclerosis elsewhere (Table III) in the body is of interest. Of the twenty-two cases showing no occlusion, six or 27.2% showed no unusual sclerosis outside these vessels, though usually the cerebral vessels were not examined. Eight showed generalized arteriosclerosis, but none of them were noted as marked or extreme. In the remaining 8, more than the usual amount of sclerotic change was noted in the aorta but not in other vessels.

Of the 18 cases of occlusion, in 4 or 22.2% no appreciable sclerotic change was noted outside the coronaries. 12 showed generalized sclerosis, noted as "marked" in five. In the two remaining the aorta was more diseased than could be expected in the normal for the given age. In 25%, therefore of the whole series the sclerotic process was markedly localized in the coronary arteries. These observations are undoubtedly open to some criticism because one does not usually examine the other smaller arteries with as much care as he does the coronary vessels, and furthermore no observation has been made in these cases concerning the arterioles.

The left coronary, particularly the anterior descending ramus, is the vessel usually most affected by sclerotic processes and consequently most commonly occluded. The right is least affected and less often occluded. (See Table IV).

TABLE IV

LOCATION OF OCCLUSION

	NO.	%
Right coronary	3	16.6
Left coronary	14	77.8
Both coronaries	1	5.6
Left circumflex	1	
Left anterior descending ramus	11	
Left both branches	1	
Left main artery	1	

The early changes are yellowish intimal thickenings either in patches or in long streaks or rather typically nodular in type. A very common lesion is one which partially or completely encircles the vessel. Proximal and distal to such an annular lesion the vessel may be relatively normal. Often these constricting lesions occur here and there along the course of a vessel with reasonably normal vessel wall between them. The most common site for such a constricting ring is in the first 10-20 millimeters of the anterior descending ramus of the left coronary. Judging from microscopic findings we can presume that these patchy changes continue into the arterioles producing either diffuse or irregular constrictions of these vessels. (See Fig. 3). This links up with the hypothesis advanced to explain many cases of so-called essential hypertension i.e. arteriolsclerosis, and explains a certain type of case of coronary occlusion which Herrick has termed the "Mild cases". It also helps explain the cases having extensive fibrosis of the ventricle before ever having an attack of typical pain or even being aware of any existing heart trouble.

The pathology of occlusion as regards the heart muscle may be divided into that of acute and chronic obstruction. The former may of course be caused by an embolus without any preceding sclerotic or endarteritic changes but this is relatively rare and the changes are those that occur when complete obstruction happens in the course of the chronic lesion. There is no reason for describing these lesions as entities because what occurs in the chronic type happens also in the acute providing the patient survives long enough. If relatively complete obstruction occurs in a large branch without any previous disease, however, death may be instantaneous or life may be prolonged but a few minutes, consequently no morphologic change can be demonstrated in the muscle. It is simply deprived of oxygen and function ceases, the ventricles probably being thrown into fibrillation, a condition incompatible with life.

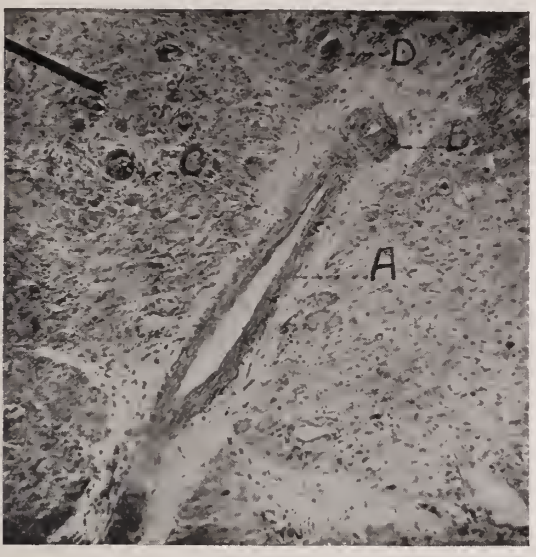

Fig. 3. Section of left ventricle wall, case No. 6. A, thick-walled arteriole; B, marked increase in thickening with almost complete obliteration of the lumen at angulation of vessel; C, obliterated vessel of smaller calibre. Note connective tissue, cellular infiltration and degenerating muscle fibres, D.

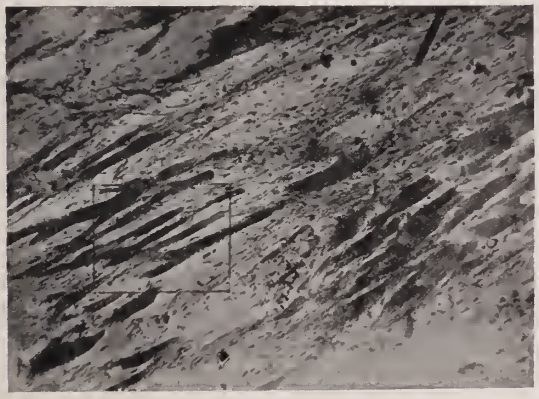

Fig. 4. Section of left ventricle wall, case No. 6. Shows both remnants of degenerated muscle and the new connective tissue replacing the muscle fibres that have disappeared.

In the chronic type small twigs of the artery become successively occluded. In any given area thus deprived of its blood supply certain changes take place consisting of edema of the interstitial tissue, gradual breaking up of the muscle fibers, cellular infiltration, proliferation of fibroblastic cells and the final production of scar. (Figs. 4, 5 and 6). These slight lesions may be scattered as islands through the otherwise apparently healthy muscle tissue. These may occur successively until large areas of the ventricular wall are composed almost totally of scar tissue. (Fig. 7). It is this type of case that Herrick refers to as the case with mild symptoms. One sees cases from whom he can get no history of any symptoms over the period of time that these changes were taking place. Others could remember occasional twinges of pain, "stitches" in the heart region, etc., which in the light of later events could be interpreted as symptoms of the occlusion of coronary twigs.

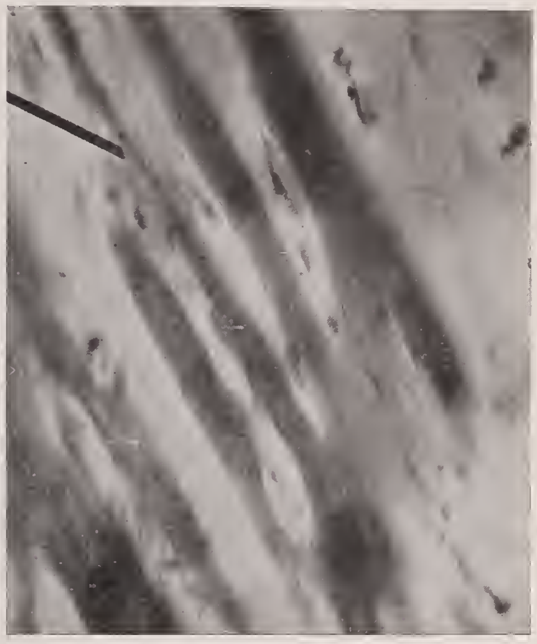

Fig. 5. High-power photo-micrograph of the portion in Fig. 4 outlined by the rectangle. Shows muscle fibres in various stages of degeneration together with fibro-blasts and new connective tissue.

In any of these accidents the affected area of myocardium is likely to reach the epicardium which will be involved by an acute inflammatory reaction ending in complete restitution, thickening, or even adherence to the pericardium. (Fig. 12).

Whenever a large area is acutely infarcted either alone or during the course of the chronic lesion a large area of heart muscle becomes softened. If the patient survives, this area of muscle may undergo the same changes as the smaller areas and become fibrosed. However, it is this type which so often leads to the production of rupture of the heart or the formation of cardiac aneurysm. (Figs. 12 and 13).

The complex which we term coronary thrombosis usually occurs from 50 to 60 years of age in males but a few cases occur in the fourth decade and occasionally in the early twenties.

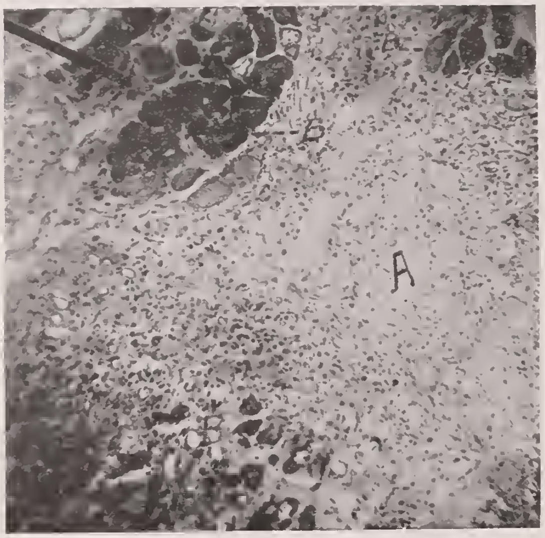

Fig. 6. This Section of left ventricle wall, case No. 6. A, patch of connective tissue; B, muscle fibres in various stages of degeneration.

Herick[(5)] divides the cases into four groups:

> "1. Cases of instantaneous death.
> 2. Cases of death in a few minutes or hours.
> 3. Cases of severity, with death deferred for many hours, days or weeks; or at times ending in recovery, i. e., cases that live long enough to permit of study and that arouse the greater clinical interest.
> 4. Cases with mild symptoms."

The characteristic syndrome is more or less familiar to each of us. I can do no better than quote again from Herrick, his description of the typical picture.

> "The patient, generally an adult who may have known of hypertension or may have had angina pectoris, is seized suddenly, perhaps while quiet, with a severe substernal or upper epigastric pain that may radiate to the neck, arms or epigastrium. Contrary to the rule that holds in attacks of angina of effort the pain does not soon disappear, it lasts and requires large doses of morphine for its relief. There is evidence of shock or collapse, the countenance is ashy, the pulse weak, generally rapid, perhaps irregular, the heart tones faint. The blood pressure falls. Dyspnoea may be marked. Death may occur in a very short time or the patient may live days, weeks, or may recover. The heart may show that it has been hard hit, by its persistant weakness or irregularity and by dyspnoea, rales, enlarged liver, albuminous and scanty urine. Strongly suggestive are a pericardial friction a few hours or days after the accident, due to the roughening of the pericardium over the infarcted area; also a rise in temperature and a leucocytosis. Electrocardiographic changes are quite significant. Such a grouping when other diseases that might produce such symptoms can be excluded . . . is almost pathognomonic of acute obstruction of the coronary artery."

One sees in practice every phase of the above description and every possible variation from group to group in the classification given. For instance recently I examined postmortem a laboring man of 67 years. (Case 1). He had worked for the Burlington railroad for twenty-five years and had not been ill. On the morning of death he left home as usual, not having complained then nor at any time of illness. On the way to work he stopped at a switchman's hut in the railroad yard to rest and get warm. The switchman went out for a few moments and when he returned the victim had slumped over and was dead. No one knows that he had then or ever any precordial pain or other evidence of heart failure. At the postmortem the left coronary was nearly occluded where it divides into its two main branches. The circumflex branch which supplies the posterior wall of the left ventricle was most nearly occluded. Two or three centimeters from the bifurcation the anterior descending ramus was enveloped by a broad annular sclerotic ring through which, for a distance of half a centimeter no lumen could be traced. The right coronary had a thick wall and a small lumen and four cm. from its origin it offered the same appearance as just described. This means that every main branch of both coronaries was potentially occluded. No recent thrombus was evident. The whole posterior wall of the left ventricle was patchily sclerosed, in some places being composed entirely of connective tissue. (See Fig. 7).

This man's heart disease had been going on for years—a twig here and a twig there being sclerosed and occluded with the resultant patch of scar tissue. When the process reached a certain point something happened to his myocardium, it dilated, or fibrillated. At least one day his heart suddenly failed. Did this man have symptoms before? He probably did but being a laborer with a less sensitive make-up he had never complained. On the other hand ,the advance of his lesions may have been so gradual that he never had pain.

I followed a man (Case 15) 64 years of age through a little over three years of progressive heart failure. During that time he had an attack of kidney colic due to stone, one attack of broncho-pneumonia and had part of his colon resected because of recurrent attacks of suppurative diverticulitis. He eventually died with the usual symptoms of congestive heart failure. During all this time he never had any pain in his precordium. The only heart pain he had was one sudden severe attack 7 years before I saw him. This was followed by an interval of congestive heart failure after which he apparently recovered and resumed his work. This heart (Figs. 12 and 13) showed, at autopsy, a large aneurysm of the left ventricle. I have been unable to find in the literature a description of one so large. The location and character of his aneurysm lead to the conclusion that the anterior descending ramus of the left coronary was occluded probably ten years before his death.

A barber (Case 16) 54 years old came with the history of an exemplary life interspersed with abundant physical training. He had never had any symptoms of heart disease nor any pain in the chest. Three months ago he lifted his share of a crated barber chair weighing 300 pounds. While doing so he was seized with severe precordial pain. His pain continued and was increased by exertion. On rest in bed and digitalis he became comfortable and for three weeks got along well but died abruptly while lying quietly in bed. Whether there was terminal pain no one knows as he was alone. At autopsy he had a rather small heart (Figs. 14 and 15) but fully one-half the left ventricle wall was composed only of dense connective tissue of the consistency of gristle. This was in the field supplied by the anterior descending ramus. The posterior portion is also involved in the area supplied by the posterior descending ramus of the right coronary.

A preacher, (Case 6) age 63, came with evidence of progressive heart failure. He had never had pain. His heart was enormous in size. The electrocardiogram (Fig. 16) showed right bundle branch block of marked degree. On rest and digitalis he recovered compensation and was comfortable for three months. Suddenly one night at 11 p. m. he developed a most exquisite pain beneath the sternum radiating to the finger tips in the left arm. This was the first of which he had complained. Half a grain of morphine failed to relieve the pain. He became unconscious in about two hours and twenty-four hours after the onset he died. The heart showed all grades of fibrosis from recent infarctions to dense connective tissue in the realm of the left coronary. (Figs. 3, 4, 5, 6 and 10).

(To be concluded in the next number)

THE MINOT-MURPHY TREATMENT IN TYPES OF ANEMIA OTHER THAN PERNICIOUS ANEMIA*

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INTRODUCTION

The recent experiments of the Italians, Castellino and Pierra, and the still more recent experiments of the Americans, Whipple and Robscheit-Robbins, and the clinical applications by Minot and Murphy of their discoveries to the treatment of pernicious anemia have turned the attention of investigators and clinicians upon the problem of anemia as a whole. We now realize that it is one of the most common ills of our generation and that it is very much more prevalent than we supposed it to be. Almost all conditions lead to anemia—loss of blood through acute or chronic hemorrhage, infection with the lower organisms and infestation with such parasites as tapeworm, hookworm, fishworm; malnutrition; conditions leading to achlorhydria; drugs and chemicals; diseases of metabolism; disorders involving the erythrocyte and leucocyte-forming organs, malignancy; cardiac disturbances and pregnancy.

We also now realize the significance of anemia from the standpoint of pathological physiology and from the standpoint of preventive medicine. Anemia is a condition which imposes a physiological burden upon the organism. It leads to general debility and to loss of resistance to infection. It leaves its dire effect also on the circulatory system. When quite severe anemia puts a serious strain on the heart, for the myocardium is directly affected. Examination of a patient with anemia may reveal certain conditions indicative of the fact that the heart is carrying on its work under difficulties. Tachycardia, apical and pulmonic systolic murmurs, and increased peripheral pulsation are frequently met with in the anemic. The cardiac output is increased. The compensatory increase in cardiac output, if kept up for a number of years, is apt to cause an over-worked heart finally to succumb. We cannot but regard anemia as a contributing cause in cardiac and circulatory failure.

Anemia retards convalescence. It is often a sequella following an acute illness. It increases the danger of intercurrent infection. It is not only a handicap in patients requiring medical treatment but also in patients requiring surgical intervention. Anemics, as a rule, do not stand up very well under anaesthesia. Surgical shock, hemorrhage and post-operative acidosis are more prone to occur among them. Not only is anemia conducive to intercurrent infection but its presence delays the healing of wounds. In treating any pathologic condition it is very important to remove a co-existing anemia, a barrier to prompt and complete recovery.

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THE EARLY REPORTS OF SECONDARY ANEMIA TREATED WITH THE MINOT AND MURPHY PROCEDURE

The application of liver feeding and high vitamin feeding to cases of pernicious anemia suggested by recent experimental work has added to the therapeutic armamentarium a method that gives results not approached by any other measure. Attention during the last few years has been so thoroughly fixed on the treatment of pernicious anemia that the treatment of other varieties of anemia has been more or less neglected. The neglect is partly due to some early reports of the unfavorable results obtained in the application of Minot and Murphy's dietary regime to anemias other than pernicious anemia. These reports deterred many from applying the treatment in the more common anemias. We now must take cognizance of the fact that the early investigators were not altogether correct and that the Minot and Murphy treatment in reality enjoys an applicability wider than was first attributed to it.

In the early days of the Minot-Murphy treatment the results reported in the treatment of secondary anemia were by no means bright. Brill described three patients in whom he observed only a slight rise in hemoglobin and in the number of red cells, even though the cause of the anemia was removed prior to the installation of the dietary regime. In one patient suffering from inoperable cancer he could find no change at all in the blood picture. Middleton studied forty patients with secondary anemia. Among the pathological conditions in which Middleton observed doubtful therapeutic results were pulmonary tuberculosis, pyemia and purulent pericarditis occurring in the same patient, rectal fistula, exophthalmic goiter. Decidedly negative findings he reported in cancer of the caecum, epithelioma in the left groin, toxic thyroid, exophthalmic goiter, renal tuberculosis, pulmonary tuberculosis (complicated with laryngitis and enteritis), achylia gastrica, ulcerative colitis, incomplete abortion, anemia complicating pregnancy (post partem), puerperal anemia recurrent in each of six pregnancies, subinvolution uteri, fibrosis uteri, diabetes mellitus (complicated with empyema), hydronephrosis, pericarditis, subacute bacterial endocarditis, aleukemic lymphatic leukemia. Vaughan has reported negative results in one patient with aleukemic lymphatic leukemia and a positive Wassermann, with one patient with cancer of the prostate and metastasis in the bone, and with one patient suffering from secondary anemia of unknown cause.

The opinion that the Minot and Murphy treatment was of no avail in secondary anemia arose from the fact that Minot, Murphy and Stetson themselves did not as a rule obtain a characteristic rise in the reticulocyte count in such cases, although they did report the occurrence of a shower of reticulocytes after the ingestion of whole liver or liver extract in one patient with Hodgkin's disease and in five patients with typical secondary anemia, two of whom were pregnant. We now know that lack of reticulocyte response is not to be interpreted in the sense that there is lack of regenerative activity on the part of the bone marrow and is not to be considered as therapeutic failure. The reticulocyte response, according to Minot, Murphy and Stetson, may not appear as a result of the ingestion of liver in insufficient amounts, or it may be absent or appear only to a very slight degree in any type of anemia where the red cell is three million or above. Wahlberg concludes, however, that while the reticulocyte response is marked only at a red count below three million, it may yet attain a height of 5 per cent at this erythrocyte level and may be distinct at any erythrocyte level. In general it may be stated with Yang and Keefer that the lower the erythocyte count the higher is the expected rise in reticulocytes during recovery. As the erythrocytes rise to normal, the reticulocytes fall to normal.

Instances of reticulocyte response in secondary anemia are by no means wanting. We have already stated that Minot, Murphy and Stetson recorded an increase in reticulocytes after the ingestion of liver or its extract in one patient with Hodgkin's disease and in five other patients, two of whom were pregnant. Keefer and Yang also reported increase in reticulocyte count in pregnancy. Liver or liver extract, according to Richter, Maurer and Eyl and also according to Richter Isaccs, Sturgis and Smith, also stimulates the pouring into the blood of reticulocytes in increased numbers in tapeworm infestation. Keefer and Yang reported similar findings in hookworm disease. Chlorosis, posthemorrhagic anemia and undernutrition also showed greater reticulocyte production under the influence of liver ingestion. Yang and Keefer state that in many cases of secondary anemia the results produced in the reticulocyte count were as striking as those seen in pernicious anemia following treatment with liver or liver extract. It would appear therefore that feeding of liver or liver extract as a method of treatment in anemia is not specific for pernicious anemia, but has a beneficial effect in many forms of secondary anemia.

So far we have discussed almost wholly negative findings. Positive results were also at hand in the history of the new treatment. Murdock reported that the response to the new diet was much more rapid in secondary anemia than in primary anemia. Berglund administered fetal calf liver in several cases of secondary anemia which had resisted all old forms of treatment and obtained excellent therapeutic results. In another patient with a toxic type of secondary anemia in which the erythrocytes and hemoglobin were low he observed a remarkable response from liver extract both in the red cell count and in the percentage of hemoglobin. Porges reported good results with the Minot and Murphy regime in anemia due to nephrosis. Davidson reported a nephritic patient in whom liver treatment brought on a reticulocyte response as high as 15 per cent, but gave no further information. Middleton observed that fourteen out of the forty patients he reported responded more or less favorably to the Minot-Murphy dietary regime. The anemic patients that showed improvement had the following pathological conditions: Prostatic hypertrophy, malaria, endocervicitis, lead poisoning, compound fracture with osteomyelitis of the tibia, fibroma uteri, chronic cholecystitis, empyema and chronic sisusitis.

SECONDARY ANEMIA DUE TO INFECTION

Early in the new treatment the opinion gained force that the Minot-Murphy treatment was of no avail in secondary anemia due to general infection or to chronic pyogenic foci. There is no doubt, however, that infection and intoxication, according to Whipple, may delay new hemoglobin production by means of liver therapy. According to Lo-Presti Seminero, Whipple's method gave no improvement in the blood picture in a patient with leishmaniasis, and according to Keefer and Yang, production of reticulocytes in kala-azar does not seem to be influenced by treatment. Yang and Keefer observed no beneficial results with liver and iron therapy in anemia associated with undernutrition complicated by severe infection, although patients with anemia due to undernutrition without complications improved greatly under similar treatment. Witts describes two cases of staphylococcal septicemia complicating pernicious anemia. One patient was given blood transfusions and the other liver extract and blood transfusions. The first patient died; the second one recovered. Yet, in spite of the recovery of the patient treated with liver extract, Witts expresses the opinion that sepsis appears to inhibit the action of liver.

The reduction in the efficiency of liver as a hematopoietic stimulant in the presence of infection does not always seem to be great enough to remove all of the biological activity of liver. Middleton reported good results with the Minot and Murphy procedure in malaria, endocervicitis, osteomyelitis, chronic cholecystitis, empyema and chronic sinusitis.

That we cannot make a general statement with reference to interference of regenerative activity in the blood-making system in the presence of infection is also brought out by the reports published concerning the anemia in tuberculosis and syphilis. The secondary anemia of tuberculosis responds to the new dietary treatment. Deljust-Defiol observed an increase in the weight of tuberculous patients, and also an increase in hemoglobin content and in erythrocytes. Garin, Boucomont and Rougier also reported an increase in hemoglobin and in red cells, but no change in weight and no alterations in the pulmonary lesions.

The anemia of syphilis is also amenable to dietary treatment. Maurer, Richter and Koessler reported that a diet rich in vitamins and containing liquid liver extract and hydrochloric acid is beneficial in severe anemia associated with syphilis. A permanent improvement in the blood picture, however, will not be maintained unless the underlying cause of the secondary anemia is treated. The danger of blood destruction from anti-luetic treatment in patients suffering from severe anemia and syphilis is decreased when the patient is placed on a diet rich in vitamins and containing liver extract. Vitamin-depleted patients do not tolerate mercury. It is advisable to place all luetic patients on an adequate diet when undergoing treatment.

FEBRILE ANEMIA

A unique type of anemia, designated as febrile anemia, described first by MacIntosh and

Cleland and later by Moschowitz and also by Brill, has interesting essential features. It is more or less acute in onset. It is a rapidly developing anemia resembling the pernicious type in severity, but retaining the characteristics of a secondary anemia with respect to the appearance of the blood corpuscles. The pyrexia accompanying it is irregular, the temperature usually ranging between 100 and 102. The characteristic pathological lesion as described by Moschowitz is a plugging of the terminal arterioles and capillaries with hyaline thrombi. In a more advanced stage these hyaline masses are penetrated by fibroblasts, and a tubercule-like structure is formed. The general clinical course of the disease is suggestive of an infection although blood cultures are sterile. MacIntosh and Cleland, however, obtained from the spleen fourteen hours after death the growth of a large bacillus. It had rounded ends and stained irregularly. With reference to treatment it may be stated that blood transfusion may help as it did in one of the patients described by Brill and that the new dietary regime of Minot and Murphy is very effective, according to Behamou, Jude and Gille.

ANEMIA DUE TO CHEMICAL POISONS

Liver may be effective in the treatment of experimental anemia induced by chemical poisoning. Strisower observed that liver brings about a rapid regeneration of red cells in anemia produced by toluylene-diamine or by hemolysis. Anemia caused by phenylhydrazine showed no improvement under liver therapy. Middleton reported improvement in a patient with anemia brought on by lead poisoning.

THE ANEMIA OF JAUNDICE

Liver therapy promises to be of aid in the treatment of the anemia accompanying jaundice. Jordon and McVicar state that in cases of jaundice due to any cause anemia may occur independent of infection or loss of blood. They believe that the anemia is not due to the hemolytic action of bile salts, but that nutritional factors are probably of most significance in etiology. Jordan and Green produced anemia in animals by ligation of the common duct. The experimentally jaundiced animals were divided into groups. One group was fed the basal diet of Whipple and Robscheit-Robbins, which does not allow of hemoglobin regeneration. The other group was fed the same diet plus liver. In this group the animals proved more resistant to the effect of obstruction, and the liver diet acted as a hematopoietic stimulant. Minot and Murphy reported chronic hemolytic jaundice in a patient whose reticulocyte count was 200,000 per cm. and which diminished rapidly as the red cell count rose to normal under treatment.

ANEMIA ASSOCIATED WITH SPLENOMEGALY

In anemia associated with splenomegaly liver treatment may prove effective. Fiessinger and Casteran reported the result of treatment in a patient with anemia and splenomegaly associated with attacks of jaundice and indigestion. After four months treatment the red cells rose from 2,200,000 to 4,100,000 and the hemoglobin from 35 per cent to 85 per cent. The patient was active and well. The spleen was no longer palpable. The patient had been so gravely ill before treatment that splenectomy had been contemplated. Holsti considers liver extract an adjuvant in the treatment of Banti's disease.

Warner reported severe hemolytic jaundice not due to Addison's anemia or to acholuric jaundice, occurring in a child one year old, with an enlarged spleen reaching to the level of the umbilicus. The condition was controlled by liver treatment, and at the end of nineteen months the spleen was only just palpable. The dose of liver extract necessary to control the abnormal hemolysis was equal to one-half pound of fresh liver. On half the dose, however, the hemoglobin rose very slowly, and the yellow pigmentation of the skin persisted.

THE ANEMIAS OF PREGNANCY

Anemia is a very common condition in pregnancy. Many women come to term with a hemoglobin of 70 per cent or even less. The anemia of pregnancy may occur during the period of gestation or it may develop as a post-partum complication due to severe hemorrhage or infection. The anemia occurring in pregnancy can hardly be considered physiological even though it may disappear two or three weeks after delivery. Galloway has shown that the anemia of pregnancy may be reduced or done away with by diet, iron therapy and ultraviolet irradiation.

There is a type of hemolytic anemia occurring in pregnancy which is very severe and which some classify as pernicious anemia of pregnancy. It responds promptly to blood transfusion after the uterus has been emptied. Blood transfusion stops hemolysis and leads to prompt recovery in 90 per cent of the cases. Without blood transfusion the mortality is put at 50 per cent by Gallupe and O'Hara, 75 per cent by Larrabee and 87 per cent by Delman. That liver therapy has a definite place in this severe type of anemia as well as in other types occurring in pregnancy is indicated by the findings of Evans, Brault, Larribere, Deschamps and Froyez, Vaidya, Devraigne and Laennec, Reuben, Field and Morgan, and also Audebert and Fabre.

THE ANEMIAS OF INFANCY

The new treatment should not be overlooked in the anemias of infancy. Herz reported favorable therapeutic results with liver in fourteen out of fifteen infants suffering from anemia. The one absolute failure was in an infant suffering from sarcoma. Tuscherer recorded definite improvement on instituting liver therapy in five children with anemia secondary to infection. Mackay concluded that whole liver was good in anemia induced in infants and children by deficiency in diet.

Severe anemias of infancy have also been treated with liver. That severe anemias do occur among infants is evidenced by the reports of Faber, Orrico and others. Faber reported pernicious anemia in a patient nine and a half months old. the earliest authenticated case of pernicious anemia on record. In this connection it is interesting to mention that Orrico has very recently reported that pernicious anemia in a female child two and a half years of age with oligocythemia, color index above one, leukopenia, diminution of plateletes, relative high lymphycotosis, presence of normoblasta, megalocytes and megaloblasts. Orrico also reported a case of aplastic anemia in a male child two years and four months old with a great diminution of red cells, color index below one, intense leukopenia, relatively high lymphocytosis with absence of erythroblasts and myeloblasts and with manifestations of hemorrhagic diathesis such as purpura, prolonged bleeding time and lack of reactivity of the clot. The other patients of Faber were anemic but did not show the typical picture of pernicious anemia. Faber concludes that, apart from the possibly still debated question of the occurrence of primary anemia in infancy, there does not appear to be any doubt that as early as the sixth week of human life, a type of anemia does occur in which the maturation of erythrocytes in the bone marrow is defective or inadequate and in which liver extract is of striking therapeutic value.

MILK ANEMIA

There is one form of anemia, which is a true nutritional anemia, brought on by a diet too high in milk intake and consequently too low in foods containing dietary essentials required in hemoglobin and in red cell formation. Milk and its products are beyond doubt very important foods, but they are extremely poor in iron and almost wholly lack the dietary factor of Whipple and Robscheit-Robbins present in great abundance in liver and kidney. The anemia induced by a diet consisting of milk as the sole article of diet or by a diet excessive in milk is readily amenable to treatment with foods providing iron and the anemia-preventing or anemia curing factor of Whipple and Robscheit-Robbins. The experiments of Mitchell and Schmidt, of Mitchell and Vaughn and also of the Wisconsin group of workers—Hart, Elvehjem and Steenbock—indicate that anemia in experimental animals resulting from a continued diet of milk can be cured by the addition of certain foods, such as cabbage, lettuce or their inorganic residue obtained on ashing. Tuscherer reported five cases of anemia in milk-fed infants successfully treated by a daily allowance of fifteen grams of liver per kilogram of body weight. The treatment was effective in post-infectious as well as alimentary anemia. With regard to nutritional anemia we may also cite the favorable results recorded by Whitehead and Barlow with beef muscle and liver in the anemia of rice disease produced experimentally in albino rats.

ANEMIA AND CARDIAC CONDITIONS

The new treatment for pernicious anemia has found useful application in treatment of anemia due to cardiac pathology. Of Middleton's three patients with cardiac decompensation two improved and one did not. In a case of endocarditis refractory to many previous methods of treatment, Smith relieved through liver therapy the anemia and fever, and the patient soon recovered.

Liver promises to be an important adjunct in the treatment of cardiac insufficiency not only because it tends to remove the strain on the heart caused by anemia, because it also happens to be a good diuretic. Porges maintains that liver is a very efficient diuretic in edema in which anemia is a causative factor, in cardiac deficiency and in the ascites consequent upon congestion in the portal circulation as in liver disease or in heart disease. Gasparini reported the case of a male patient who presented moderate anemia, ascites, and edema of the lower limbs, due to interstitial hepatitis probably of malarial and alcoholic origin. The amount of urine passed daily averaged 600 cc. The institution of a liver diet was followed by increased diuresis. On the second day of the diet 3,500 cc of urine were voided. In the days following the quantity eliminated ranged between 2,500 cc and 3,500 cc. After ten days the edema of the lower limbs and the ascites were greatly reduced. At this point the diet was suspended and on the fourth day thereafter the urinary output dropped to 1,000 cc. With resumption of the liver therapy the excretion of urine again became abundant. At the end of fifteen days the ascites and edema disappeared.

Porges recounts the success of liver as a diuretic in two patients with cardiac insufficiency and also cirrhosis of the liver complicated by general anasarca and ascites, and in another patient suffering from a combination of diabetes and cirrhosis of the liver with ascites, and in still another patient with cachectic edema and secondary anemia. Jungmann also observed in hydropic patients with cardiac disease and in patients with genuine nephrosis the immediate induction of strong diuresis by means of liver. Porges as-strong diuresis by means of liver. Grossman reported two cases of lipoid and nephrosis in which liver improved the anemia and also increased the water and salt output. Porges asserts that liver contains a diuretic agent which is potent when taken by mouth. The writer's diet for cardiac decompensation, which is given in full in the latest edition of Proudfitt's Dietetics includes liver, chicken gizzard, apricots, peaches and prunes as routine articles of diet.

In passing we may state that the potency of liver with reference to diuresis has been established as a result of the experimental work of Lamson and Roca, Pick and Wagner, Molitor and Pick, Glaubach and Glaubach and Molitor. The diuretic activity is said to be hormonal in nature and liver extracts have been prepared with varying degrees of potency.

(To be continued)

REPORT OF THE 1930 CONGRESS OF THE A. M. A. COUNCIL ON MEDICAL EDUCATION AND HOSPITALS*

J. S. WELCH, M. D.,
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Organization in *any* work is a great factor in the efficiency of accomplishment. The limitations of efficient activity in the A. M. A. are now so great as to challenge our comprehension. With an association numbering well over one hundred thousand in a profession of one hundred and forty-three thousand, all earnestly devoted to the care of the health of 130 million of the most enlightened people the world has ever known, the superlative degree of perfection in organization is necessitated. Without it, the rapid flow of constantly changing conditions might easily precipitate bankruptcy, speaking in the sense of health, finance, or the life of the profession itself. Even with the proficiency of the great American Medical Association, these threats have, do, and will exist. Witness as example of these, the ravages of the late "flu" pan-epidemic; the financial threat of the "over heralded" high cost of the care of the sick, and the threat to the profession as is, by State Medicine. It should be borne in mind that it is your organization and mine and it behooves each and all of us to further the progress of all efficient activities.

One important section of this great organization is its Council on Medical Education, Medical Licensure, and Hospitals. The annual Congress of this Council occurred, as usual, at Chicago in February. This report of your delegate can do little more than call your attention to the important subjects there discussed and urge you to watch for a complete report of the Council's transactions in your journal. Study them so that you may have and exercise the best possible judgment constantly.

RAPID CHANGE IN FLOW OF EVENTS

Having now watched first hand the activities of this Council for several years, I am more and more impressed with the rapid changes in the character and the growing magnitude of its tasks. Originated very largely as the council was, some twenty-six years ago, to perfect the medical schools of the U. S. A., which were then 4% plus good and 95% bad, it has more than reversed this percentage This task linked itself closely with the work of the Association of Medical Colleges and the State Board of Licensure work, and still does. The A. M. A. had no jurisdiction over either of these, then nor now, but the cooperation established worked greatly for the good of each, and still does. Later the Council undertook the task of standardizing the hospitals for efficient training of internes. Then for improving training schools. Later they attempted to standardize clinical laboratories in and out of hospitals; then x-ray laboratories, and now physical therapy work.

One notices how all these accomplishments support the care of the sick and the health of the nation, but without directly concerning themselves with disease and its scientific management. At the annual A. M. A. meeting the big feature of the program is a scientific discussion of disease in its many phases, and while there is an occasional new disease, for the most part we discuss over and over tuberculosis, heart disease, cancer, osteomyelitis, etc. In this Congress of the Council, the tasks attempted have the peculiar character of never being just the same as well as never finished. For instance, twenty-five years ago our chief problem was concerned with the education of the medical student. Perhaps today it is most concerned with the instruction of the public, or one may say the greater and more effective distribution of medical knowledge.

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*Read before the general session, annual meeting, Nebraska State Medical Association, Lincoln, May 13-15, 1930.

Today there is an ever diversifying health problem, and to me the council seems like a great smelting pot for the best ideas which the association knows how to assemble, and out of it all comes the crystallization of the best, whether under the A. M. A. jurisdiction or not, because the final crucial test in health matters in a democracy is public opinion mellowed by the wise judgment of time. Perhaps the best way to understand the diversity of the task of the council is to survey the program of this year's congress. It is no longer a single session convention attended by thirty to forty delegates. It is a veritable three-ringed circus and a delegate is as perplexed to know which ring to watch as he was a decade ago when occupying a seat in Ringling Bros.' big tent.

A glimpse at the program will illustrate.

The congress opened in general session with a program on "Live Topics in Present Day Medicine." The discussion centered on:

"Relation of Federal, State and Municipal Government to Hospital Maintenance;

"The A. M. A., Its Function and Future;

"Current Problems in Medical Education as Seen by The Commission of Medical Education."

These offerings were by Ray Lyman Wilbur, Secretary of Interior; Wm. G. Morgan, president-elect of the A. M. A.; Morris Fishbein, Editor *A. M. A. Journal;* and Willard C. Rappleye, director of Commission on Medical Education.

Each and every other session had a comparable galaxy of talent and the topic for the session was handled as a two or three hour symposium. There were fourteen such symposia, dealing with such intensely interesting and current topics as,

"Importance of Pathology in Medicine."

"Hospital Prescribing."

"Medical Teaching Plants."

"Training of Technicians."

"Hospitals and the Cost of Medical Care."

"Physical Therapy."

"State Medical Board Problems.'

"Full-Time or Part-Time System of Medical Teaching."

"Hospital Administration and Staff Organization."

"Practice and Teaching of Obstetrics."

If one lets his imagination flow a bit on each of these subjects, he will promptly see that the year's work in the council concerned itself with the vital current problems; he will see how changed these problems are from twenty-five years ago; how regional some are; (Negro hospitals) and how the A. M. A. with its splendid organization assembles the best talent, mixes the practice with theory, the ideal with the available, and smelts out from this rough conglomerate the pure or at least the refined conclusion for our consideration.

Some of these problems do not concern us, except to know about and sympathize with our fellow practitioner and remote neighbor. Witness the Negro problem, the management of five hundrew to one thousand bed hospitals, and the care of millions of middle class people occupying tiny dwelling apartments not at all adaptable to the care of the sick. On the other hand, we have problems not applicable to some others. Witness the difficulty in servicing Cherry county doctors with post graduate information. This is not a joke. It is quite as sensible to expect a doctor to *maintain* a high medical efficiency as to acquire it in the beginning. Laws compelling this are not far distant and sources of better medical education are recognizing and attempting to effect this measure. Witness again our medical schools in a relatively young and sparcely populated state—with little or no endowments, competing with those superlatively endowed. If it is right to build a teaching hospital, it is correct to buy equipment for it before the structure has undergone several years of depreciation. Greater perfection of our state medical organization to compare with that above referred to in our parent association might put each and all of us in a better position to support the deans of our medical teaching centers and state health problems in general.

To expedite the further giving of my gleanings at this congress, I am presenting them under two headings for consideration:

A. Medical Education.

B. Hospitals.

MEDICAL EDUCATION

Attention is called to the fact that during the existence of this council medical schools have decreased in U. S. A. from 162 to 73; from 95% plus bad and 4% plus good to 95% plus good and 5%- not bad. These accomplishments alone warrant the responsibility for the future of medical education remaining under guard of the American Medical Association and the Association of Medical Colleges.

Essentials for their attention are:

The Curriculum of Medical Schools.
Assorting of Medical Students.
M. D. Distribution.
Post-Graduate Service.
Research and Experimentation.

With the aid of the National Licensure Board and better cooperation from State Boards, they must govern.

(a) Who goes into practice of Medicine,
(b) Who is kept out,
(c) and What each does after he is in practice.

I dare say five hundred applications of students are in the hands of the deans of our two Nebraska medical colleges. Many of these students have applied in both and in several other places. Lyons, of Wisconsin, says too many are applying. Six hundred American students applied for entrance to the Medical College of Edinburgh University last year and most of these had already been rejected in one or more places in America.

To cut down the percentage of medical students who never practice and who are unfit, greater care in assorting and selecting should occur early.

Further, if 90 per cent of the care of the sick can be done by the general practitioner, certainly it seems wrong to have 70 or 80 per cent of medical students proclaim their intention to be specialists. A special license for a specialist is a worthy consideration. Maintaining the graduating time ability of the student, or, better still, improving it during his years of practice, is calling for some form of more general postgraduate opportunity.

It was again emphasized at the congress that all true education is within one's self. Self teaching or learning is far better than detailed lecture teaching or cramming of facts. Therefore, the more individual reading and investigation the student has, the more permanent, usable, intellectual equipment he possesses. It was thought better for the student to concentrate on four or five major things leading to the treatment of patients, according to the anticipated field of practice or future environment.

Medical knowledge must have a better distribution. Philanthrophists are seeing this and offering more willingly their endowments for prevention than for cure measures. Only 15 per cent of our 130 million people are sick on an average at one time. Aside from the economy of lowering this percentage. it is but fair to consider the other 85 per cent. By practical health work in the public schools, through such lay journals as *Hygiea,* through insurance companies and other stimuli for health examinations, etc., etc., this better distribution of health knowledge is rapidly coming. Canada has a Medical Association health examination, and any layman is entitled to select one of four or five doctors for this examination. Establishment of centers for the teaching of medical economics is considered. This should be in limited districts so that local health problems as well as general could be taught and contact with the public encouraged. Nor would I fail to call your attention to the accomplishments of Dr. E. R. Hays of your Public Activities Committee. Through his health week lectures, his state and district fair work, he is actually reaching thousands of laymen with health knowledge. You will be interested to know that Dr. Olin West, of the A. M. A., recently stated that twenty-one different states knew of and made request for information as to how this work was being done in Nebraska.

Obstetrics had an inning on the congress program this year for the first time. Because obstetrics in United States of America has the highest mortality of any civilized country, it would seem a timely presentation. Some thoughts for consideration were,

More training of students for home or house practice.
More training with the human foetus.
More money to establish women's clinics. (Germany has always excelled in this line.)

Students do not practice as well as they are taught. They are too quick to acquire the haste and rapid delivery methods of older practitioners —forceps, pituitrin, Caesarean section, etc.

It was a general opinion that too much time is spent on surgery and too little on obstetrics by the student.

HOSPITALS

One still hears enough about hospital administration, hospital staff organization and function, autopsies and clinical conferences, consultations, internship direction, technician training and supervision, etc., to know the council still has its finger on that pulse. But as I have indicated, the constant flow of changing conditions puts these matters at present in the background. Most every important hospital discussion this year centered around "Costs"—their explanation, their justification, their relation to other expenditures, essential and nonessential, and how they could be reduced and still maintain efficiency.

Ray Lyman Wilbur is largely responsible for this five-year survey of the cost of the care of the sick, and more intentional frowns were visible this year at the congress than last on this subject. Doubtless much unfair and damaging criticism has been and will be charged against the doctor and hospital, as a result. I have the optimism to believe, however, that the end product will show a balance in our favor, because it will show no great fundamental wrongs to exist but only minor evils, which the survey will aid in correcting. I have the optimism to believe the investigation will serve as an invoice showing the pay for all services rendered in the care of the sick and care of our health is not over great—perhaps relatively under par. It should help to adjust the spread or distribution of this local tax for such services, and in addition the general interest aroused by the survey will help spread medical knowledge to the public, increase their respect for it, boost preventive medicine, stay off state medicine, and advance materially the health of our people at large. I admonish you not to allow yourself to take the defense in a discussion of the "High Cost of Medical Care". To do so admits by assumption at the out-start, an unreasonable cost. Such premises are as unfair as the question once asked a husband on the witness stand; vis., "Do you still beat your wife? Answer Yes or No." Either answer incriminated poor Mr. Husband. So here the average layman is apt to assume you admit excessive cost and charge you and other doctors with the cause. But you *may reasonably* defend the question of Cost of Medical Care of the Sick, or better, Cost of the Care of Health. In this case, be sure to distribute the spread of this cost *not alone* over the cost of the doctor, or the nurse, or the hospital, *but* over dozens of other causes, many of them needless, expensive, even harmful to the health of the community or its 15 per cent sick quota. Extend this "Spread of the Cost" over self-prescribed medicine, patent medicine advertisements on the roofs of barns and mountain sides, deceptive cures, false advertising of health food, health resorts and health hobbies, needless maid and household expense and loss of wages because of the lack of preventive vaccination or health examination. Show how a financial loss occurs by failure to budget in domestic life for sickness. Admit the needless factors of expense for educating doctors and sometimes nurses who never practice. Show how the doctor through the A. M. A., is endeavoring to correct all these difficulties, but do not concede great fundamental wrongs in the present day system.

At the congress the *Cost of Medical Care of of the Sick* was considered from four viewpoints; viz.:

(a) The Hospital.
(b) The Staff.
(c) The General Practitioner.
(d) The Layman.

The *hospital* has changed in twenty-five years from a boarding house for the sick with small bed capacity to an enormous institution rendering extensive detailed service. In a few decades we have changed from a predominent agricultural to an industrial age. From home life in independent domestic units to congested apartments almost demanding that you "stand while you eat or eat out". Wives, mothers, and girls seek employment outside the home. All of these changing conditions demand a new service station for the sick, and so hospitals have come rapidly. Many new services are extended to return and maintain man's health. Grouping this expensive equipment for common use logically occurs in the hospital and logically increased cost but not without its element of mutual economy and perfected service rendered. The training schools and nurse service—the intern service, all add to cost. The extensive drug store and a pharmacist, laboratories, and technicians all add to cost.

The logical defense is found in many definitely established facts. Of these I may mention,

Greater service for relatively less, but actually more.

The American public demands the best, whether charity, part pay, or full pay.

Convalescence rendered shorter, mortality and morbidity lower, and hence a credit item in the family domestic budget which is not usually recognized.

Few people formerly used hospitals. The large numbers now swell the total cost relatively as well as actually.

It is to be conceded that the hospital cost for the care of sick is great in spite of all these mutual services, this mutual equipment, and the lowered mortality and morbidity, but we do not concede this means fundamental wrongs, as might be assumed from the conclusions of certain lay-surveyists. A truer analysis shows hospital progress fundamentally sound. It shows lowering of cost may logically follow many changes and corrections such as:

Fewer hospitals, with less overhead duplication.

Reduce first cost and leave some for endowment.

Avoid the "Super-De Lux steamship or hotel" idea and yet build an efficient hospital.

Greater efficiency in planning plant to save time and effort in service; and this applies from kitchen to operating room.

Group nursery and more mutual service rooms and wards.

Group buying in gross lots.

Convalescent homes—which operate at an estimate of 25 per cent the hospital cost.

Encourage budgeting for sickness as the auto dealer compells the family to do or be garnished.

Emphasize the expenditure for less essential things; i. e., one billion dollars a year for cigarettes equals the entire cost for the care of sick in America.

The county, state, and government have a duty in the care of the indignent, not fairly saddled over upon the great middle class people, especially when sick.

THE COST OF THE CARE OF THE SICK FROM THE VIEWPOINT OF THE HOSPITAL STAFF

The hospital staff is the all important factor in hospitals as an institution. Without the staff, the care of the sick, directing and teaching of nurses and internes, experimental investigation and health teaching there would cease. In all these relations and others the staff contacts with the problem of cost of the care of the sick in a vital manner. Here again there is no fundamental wrong—but a multitude of causes for high cost, hard to understand, classify, or change.

The staff can lower cost by—

(a) Urging economy in physical plant and equipment;

(b) By guiding patients to more economic room and nurse service;

(c) By avoiding unnecessary hospitalization and quicker hospital study, and

(d) Without allowing lavish display and needless investigation when and because sentiment and anxiety in relatives permit it. Use ones personal diagnostic abilities first at home, in the office or clinic, and always to their maximum even in hospital. A commercially minded staff can soon be spotted and dealt with.

The staff can lower costs also by acquainting themselves through the pharmacist and store keeper and dietitian with drug and food supply prices. Do not permit over-standardization, rules or formalities to add needless financial burdens to the sick man's already over-great burdens.

THE COST OF MEDICAL CARE OF THE SICK FROM THE VIEWPOINT OF THE GENERAL PRACTITIONER

Holbrook, of Milwaukee, led this discussion. He calls attention to the fact that the medical student is taught so largely by specialists that few wish to be general practitioners. The specialist is everywhere so pushed to the front, even in the lay mind, that the poor general practitioner in late years has worn an apologetic expression for being in the picture at all, and yet 90 per cent of the work is done by him. Holbrook urges more general practitioner type of training in the schools, and especially the greater use of our five senses. Only 10 per cent of the sick need hospital care today, and he thought more diagnoses could be made in the home and office Less hospitalization means less cost. More part time nursing at home and group nursing in the hospital was advised. The general practitioner must be reasonably competent to recognize trouble and honest enough to refer the case "over his head". This necessitates a self operating intelligence, continued reading, and advancement by association with other medical men and medical teaching institutions.

The old traditional opposition to the commercial aspect of medical practice was condemned. So was the practice of a fixed medical fee. He urged an early business or financial understanding and a fee depending on the patient's ability to pay, the doctor's ability to serve, and the services rendered. In large communities where the doctor cannot know the financial status of his patients, early pertinent questions as to occupation and income will lead successfully to fixing a fair fee. It is a less valuable service if rendered as a mid-afternoon routine in the office with help, than if rendered at 2 a. m., thirteen miles from the doctor's comfortable bed. The rich should not expect a fixed medical fee any more than they expect to ride for a fixed railroad fee in a day coach on the train. The very poor deserve adequate medical care but not at the doctor's or the hospital's expense, because this means the middle class sick man must in the end pay the bill, whereas it is the duty of all the people (85% well and 15% sick), and hence a municipal and county or state tax burden. The president-elect of the A. M. A. also advocated this adjustment of fees for the care of the indigent.

COST OF THE CARE OF THE SICK FROM THE LAYMAN'S VIEWPOINT

The layman gets his viewpoint from many and diverse reports; hence, it is likely to be a conglomeration of guesses, sentiment, and emotion. This applies as well today to Brinkley, at Milford, Kansas, as to some of the laymen reporting their surveys on Cost of Modern Medical Care.

Laymen are in three classes: The rich, who must pay. And they get by. The indigent, who often do nearly as well. They never expect nor are expected to pay. The great middle class suffers most because they expect to pay and we demand it though one illness may mortgage a year's income. Such a man suffers because he fails to adapt himself to changing social customs. He adjusts himself to the luxury of the radio, auto, and clothes through cash down and installment buying. The big store budgets for him or reclaims the goods. But he never budgets for his own seven days a year on the average sickness. So when he joins the constant 15 per cent of the people who are sick in U. S. A., he is unprepared. This is not a new problem. History refers to this same middle class 2,700 B. C. It is only brought to our attention more vividly by the rapid change in social conditions. Even twenty-five years ago most people budgeted for the "rainy days" more than now.

In addition to this, most middle class men of today demand super-service. This necessitates the services of one and one-half million people to care for the sick in the U. S. A. Here there are more doctors per one thousand people than elsewhere in the world. In 1890, 318 nurses graduated. In 1929, eighteen thousand. And at this rate 1950 will graduate sixty-five thousand. Twenty-five per cent of the population of U. S. A. are now in fourteen cities. Their housing quarters demand hospitals for their sick and this middle class is in financial distress quickly when we recall that only

1 person in 36 over 21 years of age declares an income tax of $3,000.

1 person in 90 over 21 years of age declares an income tax of $5,000.

And so the cost of the care of the sick from the viewpoint of the doctors, hospitals, and laymen was this year discussed with much enthusiasm at the congress. The business end of healing must assemble and disseminate these and many other such facts not only to doctors and their associates in the technical side of caring for the sick. who, in the largest sense, are responsible, but to the laymen in all classes.

Out of this perplexing and vexing survey of the cost of the sick or cost of the care of health, I think I see one great good coming. It is a better understanding of health and medical facts by the common people.

These, gentlemen, are glimpses of some of the deliberations at the 1930 congress. I have asked for this time to report them to you in the general assembly because of a sense of responsibility as your delegate, and particularly because of a conviction that your interest should somehow be aroused to a fuller investigation of the council transactions. I appreciate the courtesy of serving in this capacity.

PRESIDENTIAL ADDRESS BEFORE AMERICAN CONGRESS OF PHYSICAL THERAPY*

ROY FOUTS, M. D., F. A. C. P.,
Omaha, Nebr.

As far back as one cares to delve into history, physical measures have been employed for the relief of human ailments. Up to a comparatively short time, these measures consisted principally in the empirical employment of heat in some form, or of manual massage or manipulation.

Generally speaking, the physician of a generation ago knew little of any form of treatment that could not be dispensed in the form of "pills," "powders" or "potions." Anyone who departed from the established custom of treatment was likely to be looked upon as not altogether regular in his practice and stood in danger of being designated a "quack."

The close of the nineteenth century found a few physicians in this country and in Europe sufficiently bold to depart from established customs by taking up the study of the faradic and galvanic currents and applying them to certain diseased conditions. This was followed by the bolder use of the static machine with its condenser discharge which, perhaps. had a greater influence on the present-day revival of Physical Therapy than any of the earlier apparatus.

The past decade has witnessed the general advent of a new form of medical practice. Twenty years ago not one doctor's office in fifty contained any physical therapy equipment. Today, more than two out of every three have, or have had, some physical therapy apparatus.

However, it may be said that not every office that contains this equipment is functioning, insofar as physical therapy is concerned. Particularly is this true of the currents designated as high frequency and sine wave. Not infrequently we go into a physician's office and find good equipment in bad condition, pushed back in the corner and covered with dust. It is clear that the physician has here neglected to take the time and trouble to understand his equipment or master its uses and applications. Not having prepared himself by proper education, he is unable to evaluate or appreciate the instrument which he was trying to operate. This inevitably resulted in discouragement and failure, and a loss of respect for a perfectly good instrument.

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*Delivered before the annual meeting, American Congress Physical Therapy, St. Louis, Mo., September 8, 1930. Reprinted from Archives Physical Therapy.

The fact that one is a licensed physician does not mean that he, or she, is competent or qualified to treat with physical methods. Physical Therapy today is a highly involved and scientific method of treatment and requires a great deal of preliminary preparation.

A physician who has given no time to the study and training in the correct use of the various physical therapy agents now accepted in medical practice, other than the instruction given by the salesman who sold him the machine, is no better qualified to administer this form of treatment than he would have been qualified to administer drugs if he had never studied materia medica and therapeutics. Yet I am certain that far too many physicians are attempting this form of practice with little or no scientific basis upon which to operate.

Attention is called to the above situation because I desire to stress the importance of continuing our school of instruction as has been the policy of this organization for the past several years. I speak advisedly when I say that for some time the American Congress of Physical Therapy has stood at the fore-front in work along this line.

There is need for more work of an educational nature. Gradually the colleges and universities are creating departments of physical therapy and its discipline is being added to the medical curriculum. The men who graduate from these medical schools in future years will leave with a better understanding of the basic fundamentals of this branch of therapy and will be better physicians for having had the advantage of this training. But what of the multiplied thousands who have had no training along this line? They are the ones we hope to reach and help, thereby justifying our existence and perpetuation as an organization.

After some of the pioneers in physical therapy had built their own machines and provided the initial proof of their value as remedial agents, the commercial world was not slow in recognizing the economic importance of this field. Huge factories were built and large sales organizations were trained to dispose of their output. The post-war period with its rehabilitation problems supplied the field as well as the proper psychological setting for a commercial campaign along this line. Salesmen were trained to demonstrate the machines and, after learning the names of as many diseases and conditions as they possibly could, they invaded the medical profession throughout the length and breadth of the land, and attempted to convince the doctor how it would be possible to double or triple the income from his practice without leaving his office.

Upon this point I also speak advisedly. Needless to say it had a very strong appeal, particularly to the man in general practice, especially if he was approaching the age when regular hours were the more appreciated.

As a result of these extensive selling campaigns which had its peaks during the years from 1921 or 1922 to 1925 or 1926, nearly 90 per cent of all the sales were physical therapy apparatus. During this time the manufacturers and distributors were quite busy with special educational campaigns. These sales seemed to reach their height about the year of 1925. The profession became over supplied with equipment. Many had purchased some particular type of equipment and had never learned how to operate it. By a customary method of perverse reasoning they felt that the equipment did not have the therapeutic value claimed for it. As a result, they pushed the equipment into a corner and ceased to be prospects for any further Physical Therapy apparatus. The field for sales of this kind thereby became narrowed as years went by. Following 1925 the sales of physical therapy equipment broke rapidly and for the past two or three years the ratio of sales for x-ray and physical therapy equipment has reversed, it now being about 90 per cent x-ray and 10 per cent physical therapy.

There is a small class of physicians who practice physical therapy just as they practice medicine. They simply treat and treat and treat. There is the larger class, however, who give the same careful consideration to the application of physical therapy that they give to the diagnosis of a case. After a careful diagnosis, they then apply the treatment indicated—whether it be medical, surgical or physical therapy. These are the men who still have a wholesome respect for this form of treatment and would hardly know how to practice their profession without it.

The educational campaigns that have been initiated by the commercial houses for the past few years have been along x-ray lines, thereby leaving unfinished the work of physical therapy education. It is to this task that the American Congress of Physical Therapy is dedicated.

At present the organization is without sufficient funds to carry on as extensive a program as desired. In fact, this annual meeting of the Congress is largely made possible by the generous support of the exhibitors at this season. By their purchase of exhibit space they are continuing to contribute to the educational campaign which they abandoned two or three years ago. I commend them to you and trust you will find time to visit with them and become familiar with the newer types of equipment. The Congress appreciates the support of these exhibitors and desires to take the opportunity, at this time, of publicly expressing that appreciation. Their attitude toward the Congress in past years signifies the earnestness of their intention to aid in the campaign of making better physicians by making better physical therapists. We again pledge the efforts of this organization to that end.

While the American Congress fully appreciates the value of the research and experimental work that has been done, and is being done in laboratories of the manufacturers, we also realize that the clinical application of these agents rests with the medical profession. We all are cognizant of the fact that physical therapy, particularly light therapy, was hardly well established in the physician's office when a direct selling campaign was instituted to the public.

This, I believe, has done much to cheapen the cause of light therapy in the minds of many physicians, and, as a result, will be a direct hindrance to the growth of this form of treatment. The value of light therapy properly applied cannot be over estimated. But herein lies the danger—in the hands of the layman, what chance is there for proper application? The one prime important factor is lacking:—a proper diagnosis. This can only come by aid of the physician. In theory, the manufacturer says to the layman, "Treatments should be taken only upon the prescription or advice of the physician." In practice it seldom works that way. The thing that more often happens is, that the physician is consulted after all available home remedies have failed. A light equipment or any remedial agent in the hands of the laity creates a sense of false security and should not be encouraged. What the public needs is education along the line of hygiene and preventive medicine and to leave treatment to the physician who knows, first, what to treat, and, second, how to treat it.

I believe we can say, without boasting or fear of successful contradiction, that the progress of medicine has kept pace with the advancement of Science and Industry. We can also safely say that physical therapy has made the greatest advance of any particular line of medicine during the past ten or fifteen years. Strangely enough many of the leading men of the medical profession, particularly the surgeon and internist, have been slow to recognize its value.

The creation of the Council of Physical Therapy by the American Medical Association, and its work along the line of standardization, together with the educational features connected therewith, has done more towards establishing a rationale for this branch of therapy than all other agencies combined. Its work is to be commended, and I urge the cooperation of the Congress in any and all of its undertakings.

The attitude of some of our leading physicians toward physical therapy, particularly the internist, is somewhat hard to understand. For example, while it would seem that the value of diathermy in pneumonia was established long ago beyond the question of doubt, I have never observed one of their patients being so treated. The same criticism may be made of the surgeon in reference to his cases of adenitis and surgical tuberculosis and other conditions, both medical and surgical, that might be better treated if physical therapy was added to his armamentarium. Until the time comes when these men appreciate more fully the value of this form of therapy in all its phases, the American Congress must continue its unabated efforts to the end that they too will give their patients the benefit of all that is best in medicine.

During the past year, the *Archives of Physical Therapy, X-Ray and Radium* has become the property of the Congress. Through the benevolent generosity of Dr. A. F. Tyler, former owner and publisher, the title was transferred to the Congress during April of this year. Active ownership and management was assumed with the publication of the May issue. This splendid acquisition came in the form of a gift from Dr. Tyler and was acquired without cost or obligation on the part of the Congress.

Dr. Tyler was one of the founders of the Congress of Physical Therapy and has given much of his time and energy in promoting its activities and interests during all the years of its existence. This splendid gift at this time is an outstanding event in the history of the organization. It is fitting that proper recognition be given, and I would urge that the Board of Governors give this matter consideration at this meeting, devising whatever may seem proper and expedient in keeping with the benevolent spirit expressed by Dr. Tyler in making this valuable donation.

The *Archives* stands in the forefront of all American publications of its kind. Nowhere can one find more abundant or more authentic material than is contained in its pages. It should be the pride of every Fellow of the Congress and each should stand ready to contribute to its advancement.

In the past, much discussion has arisen in medical circles relative to the multiplicity of medical societies and organizations. Generally speaking, I believe this point is well taken. It is far better to have a few strong organizations than several weak ones. This same principle applies to the quality of membership of any organization. It is better to have fewer members of good quality, than a large membership which includes many whose practice is irregular and whose standing is questionable. It is with this thought in mind that the Congress has rigidly adhered to the policy that qualification for membership is membership in the American Medical Association. With such a standard we can not go far wrong, and I would urge strict adherence to this principle. An increase in membership is always desirable, and I would suggest that a direct-by-mail membership campaign be considered for the coming year.

The Technicians' Bureau is a valuable adjunct to both physicians and technicians. While a great number have taken occasion to attend the annual meetings and write the examination, I believe it might be expedient to arrange for the examination to be given locally by some responsible physician designated by the Board of Examiners; the examination to be submitted by the Board and the papers returned for evaluation. I submit this for your consideration.

The standard of any organization is reflected by its membership and the character of its meetings. The quality of our membership has been discussed. I should be remiss were I to fail to call attention to the excellent program that has been arranged for this meeting.

I question if there has ever been a more substantial program gotten up by any American society on Physical Therapeutics. This program completely embraces every phase of physical therapy and has the support of outstanding medical authorities who are appearing on this program. Due credit should be given the program committee and Dr. Hollender, its chairman, upon whose shoulders the burden of providing and arranging this program has fallen. My personal thanks and gratitude are hereby extended for this splendid accomplishment. The arrangement of such a program entails an immense amount of work for the committee chairman, and I would suggest the consideration of an appropriation of a sum sufficient to compensate him for this service.

My dreams for the future of the American Congress of Physical Therapy are: That it may continue to grow and maintain the same high standard upon which it now stands; that its membership may be composed of medical men who realize that Physical Therapy is a great aid in the practice of medicine, but is not a practice within itself; of men who appreciate the value of being a physician first and a physical therapist second; that the broadest possible information be incorporated in the pages of its journal for the benefit of those who wish to practice scientific physical therapy, this to be freely tinctured with common sense.

In conclusion, permit me to say that I cherish the confidence and respect accorded me in electing me your President. I am humbly grateful for the trust implied and shall sincerely endeavor to serve you in a manner that shall continue to merit your confidence.

THE MECHANICS OF INTRACRANIAL INJURY IN THE NEW-BORN*

W. C. BECKER, M. D.,
Lincoln, Nebr.

Of all conditions which are fatal to a new-born infant, intracranial hemorrhage is easily most frequent. Barely mentioned in text books and literature of ten years ago, it is now the subject for more investigation than any single subject connected with child-birth. It is an established fact that over fifty per cent of all infants, either still-born or dying within the first week of life, show at autopsy lacerations of the tentorium or falx. In addition to those dying, we can be safe in saying that one hundred per cent of the babies born in abnormal presentation, seventy-five per cent of first-born and thirty-five per cent of normal deliveries show signs of intracranial damage as shown by the positive Babinske and Nystagmias (both signs formerly thought to be normal in normal new-born infants). Any new-born that does not breath properly, that has spells of asphyxia, high pitched cry, cyanosis or convulsion has had an injury to the brain, the symptoms varying in degree with the location and extent of the injury.

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*Read before annual meeting Nebraska State Medical Association, Lincoln, May 13-15, 1930.

Varying factors such as diet, focal infections, etc., are involved in the production of intracranial hemorrhage. However, this paper will be confined to the mechanical principles involved and the practical lessons to be derived from such considerations.

The foetal head is so constructed that it will bear a considerable change in shape without permanent effects if the force is applied gradually. The skull is made up of an elastic vault composed of six bones, which are jointed loosely and are themselves flexible, fixed by joints on a rigid non-compressible base. Excessive changes in shape of skull are prevented by the limitation of the flexibility of the joining structures and by intracranial septa of dura mater which are disposed in two main planes, one vertical and longitudinal (falx), the other transverse and horizontal (tentorium). Actual reduction in size is permitted by expression out of the skull of blood, cerebro-spinal fluid and a small portion of the medulla into the foramen magnum.

Normal degrees of moulding in ordinary vertex labor and in expulsion of after coming head in breech labors, involve compression in the long diameter and lengthening in vertical. The bulk of this change is made by the swinging forward of the occipital bones and the crowding of these bones and the frontals beneath the parietals.

The dural septa act as a check to restrain extreme and dangerous moulding. (Tearing of these by pulling the unmoulded head has been an experience of all of you as feeling the head suddenly give when pulling on a head with forceps.)

If the head is compressed in occipito-frontal diameter, the dome of the skull is elevated, and great tension is put on the falx, pulling up and rupturing the tentorium. If the head is compressed between the base and the vault and in face, there is an elongation of the occipito-frontal diameter with upward tension on falx and tearing of the tentorium.

The damage results when these tears in the tentorium or less often in the falx injuries large bloodvessels causing an increase in intracranial pressure per se. More often, however, the tearing of these dural structures, allows the medulla, which contains the respiratory center, to be forced down into the foramen magnum, with consequent paralysis of respiration. This is the commonest lesion found at autopsy. In the majority of still-born infants, we find at autopsy very little hemorrhage, but the dural tears which permit the pressure on the medulla. In the new-born who survive a few days to a week, hemorrhage is more often found as the cause of pressure.

If the mechanical features which are the cause of still-birth are thus examined and understood, the remedy must be found by each of us in analyzing the still-birth, and early deaths which occur in our own practice. The necessity of extreme gentleness in examination and manipulations of a woman in labor and the new-born are apparent.

In addition to that we can lay down these rules which should be followed by every one doing obstetrics:

1. Nothing should be done to hasten a normal labor. Pituitary solution is the worst offender.
2. Accurate diagnosis of the presentation should be made.
   (a) Forceps can be properly applied.
   (b) Head not allowed to remain in transverse arrest with pressure.
3. Holding back the head to prevent tears causes stress in antero-posterior diameter which is the most dangerous.
4. Forced efforts to induce respiration is harmful.
5. All new-born coming under the following classes should have 20 cc of whole blood injected into gluteal muscles to check hemorrhage:
   (a) Maternal indication:
      1. Prolonged labor especially where head had remained in transverse arrest.
      2. Forceps extraction.
      3. Breech deliveries.
   (b) Child:
      1. Failure to promptly breath and cry.
      2. Cyanosis or spells of cyanosis.
      3. Irregular or sighing respiration.
      4. Difficulty in nursing.

By honestly analyzing our results and honestly facing the fact that intracranial damage is of frequent occurrence and that it is possible by prompt treatment to prevent serious damage to many infants, our morbidity and mortality can be materially lessened.

DISCUSSION

K. S. J. HOHLEN (Lincoln): The only thing I have to say is this. I believe that our feeble-minded institutions are not filled with people that have had birth injuries, but a large number of people are there that have had head injuries. Any hemorrhage around any place produces a condition in which we have an obstruction. In that we get an increase in pressure and get other symptoms. It is not necessary to have a hemorrhage to have these conditions. Only a slight tear or break will produce this condition. We see cases that are relieved, show much improvement, but their symptoms return, until we solve the problem of reducing the pressure. Much will be developed in the future by the x-ray, that is, the air injection into the spine. In that way we will discover things about these conditions that we do not know now. The injection of air probably can be done on an infant as well as an adult.

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"Good friends, wherever you may be--
And be it east or west--
Upon the plain, beside the sea;
Whatever place the place may be,
Some place you love the best;
Across the silence let us call
To each of you and wish you all
A Merry Christmas."

CALL FOR PAPERS

If you wish to read a paper at the next annual meeting of the Nebraska State Medical Association, send your name and title to the office of the Secretary, Dr. R. B. Adams, Center McKinley Bldg., Lincoln, Nebr.

THE 1930 CHICAGO CONFERENCE OF STATE SECRETARIES AND EDITORS

The annual conference of State Secretaries and Editors of State Medical Journals occurred at the American Medical Association headquarters, November 14-15, with upward of one hundred in attendance. While the printed program did not look particularly interesting the discussions of papers made the session one of the most interesting ever held.

"Service for the Indigent Through Contract with County Medical Society" was presented by Dr. Robert L. Parker, Des Moines, secretary, Iowa State Medical Society. Eleven counties in Iowa have this service. In some of the counties the amount, a fixed lump sum is allocated to the different physicians according to amount of work done; in some others the amount goes into the county society treasury for educational purposes. This plan was in operation in Dodge County, Nebr., the county society having the contract, the money being placed in an educational fund. Objection by a few members from the smaller places caused its abandonment after two years. In New York state the matter is handled through a Welfare Board which pays regular fees for persons in that social condition, the fees being graded according to social status of patient. A surgeon may operate on a patient at his home and receive pay for same; but if operated on at a hospital the pay goes to the hospital. Seattle budgets $500,000 for hospitals. The community should take care of its indigent. It was suggested that the people are willing to pay the medical profession as they would like to be paid, if the matter is presented to them in the right manner.

Dr. Elliott Cutter, chairman of Scientific Research of the A. M. A. presented the need for work to antagonize the propaganda of the antivivisectionists. Antivivisection is a hysteria enjoyed for the most part by childless people. These people have no compunction about wearing a fox neckpiece and they do not care that the fox was cruelly trapped and suffered perhaps for hours. The present treatment of diabetes with insulin and the modern treatment of pernicious anemia are due to animal experimentation. The Woman's Auxiliary could do much good by propaganda opposing the antivisectionists. No cruelty to animals is tolerated by scientific medicine today.

The "Relations of State Boards of Examiners and State Medical Associations" was discussed by Dr. F. C. Warnshuis, Grand Rapids, Mich., chairman of the House of Delegates, A. M. A., Contrary to what most people believe medical regulations are for the protection of the public. Medical societies must be a unit in enforcement of the regulations. The greatest handicap of state boards is insufficient funds to carry on effectively.

Dr. W. C. Rappleye, New Haven, who spent part of the past summer in Europe studying Health Insurance gave the benefit of his studies.

There is a strong undercurrent of medical opinion that State Medicine is near. The Machine Age brings a crisis and will precipitate

State Medicine. Sixty per cent of hospital beds in the United States are owned by cities, states and the Federal government. Medicine is in a transition stage. Medicine has a public character. We cannot succeed in fighting present-day social trends of health agencies; we must give intelligent cooperation. Under German State Medicine—*Die Kranken-Kasse*—the worst possible condition exists, physicians being no more than counter dispensers. Under the English system conditions are better, but leave much to be desired. Under State Medicine, individual initiative is lost, thoroughness in diagnosis impossible and treatment haphazard.

Dr. E. A. Meyerding, St. Paul, Minn., secretary, Minnesota State Medical Association, introduced the subject "Cooperation Between Medical, Public Health and Educational Organizations." Dr. Meyerding is secretary also of the Minnesota Public Health Association and he presented an able discussion of the work of correlation in bringing about a better understanding between the lay and medical viewpoints. "The Public Relations Committee" was presented by Dr. W. H. Ross, Brentwood, N. J., which was discussed in connection with the previous paper. Outstanding suggestions: An association is just as strong as its secretary. Medical association must take position of positive leadership. Medical profession can control present day tendencies; but leadership must lead. Public health begins at home and ends at bedside. Let organized medicine appraise its own organization.

Dr. Frank C. Hammond, Philadelphia, editor of the Pennsylvania Medical Journal. discussed the "Relation of State Medical Journal to State Medical Society." Every state journal has its particular problems. A state journal can and should be the most cohesive thing in medical organization. It must be representative of a cross section of the profession of the state it represents. The human side of the doctor must be cultivated. Medical history must be kept in mind and given to the profession. Remote county societies as well as those in the largest cities should be encouraged by proper mention in the State Journal. News items, human interest tales, have a rightful place in the state journal. Editorials on economic problems and scientific subjects, by editor and others, are of the highest value. To what extent state medical journals are read by the profession is a question most editors would like to have answered. It is this editor's belief that they are pretty generally read by the profession, but that the profession is stoical, hence reactions expressed to the editor, are few.

THE WORK OF DR. COFFEY IN THE SURGERY OF THE BLADDER AND URETER

Dr. Robert C. Coffey of Portland, a master-surgeon in the technic of abdominal surgery, has recently published two notable papers, one in Northwest Medicine, "Cystectomy with Bilateral Transplantation of the Ureters in One Operation," and another in the Western Journal of Surgery, "Radical Treatment of Cancer of the Bladder".

These articles are brilliant contributions in evidence of what may be accomplished by a hard-working, intelligent student who has been able to overcome the greatest danger of cystectomy,—infection of the kidneys,—from implantation of the ureters into the rectum. By his method (introduced in 1910) of sub-mucous transplantation of the ureters in a manner as they naturally enter the bladder this danger is done away with. Nature provides that all ducts from a viscus or gland entering a mucous cavity do so by running for a short distance sub-mucously, thus preventing a retrograde infection from the mucous cavity. Example:—the common bile duct into the duodenum; the duct from the parotid gland into the mouth.

Formerly cases of extrophy of the bladder were most commonly operated upon by some form of plastic procedure, none of which did more than cover over the exposed mucous surface and attempt to form a pouch into which the urine collected but was never under control. In a discussion upon the subject, Section of Surgery and Anatomy, Meeting of the American Medical Association, 1900, I reported four cases of my own, in one of which I implanted the ureters into the vagina, but such a plastic operation is always a makeshift. Some ingenious techniques have been employed but they all have the objection that there is leakage, either suprapubic or where the mouths of the ureters are brought to the surface. That of Maydyl's is the only exception. It is a difficult technic,—part of the bladder wall with the ureters implanted into the rectum.

Coffey has done twenty operations,—eight for carcinoma of the bladder. In these the bladder after the ureters have been implanted into the rectum, is either extirpated or treated in an open fashion by radium or x-ray. In the remaining twelve cases eight were extrophy of the bladder and two for vesico-vaginal fistulas of the extreme type, and two for tuberculosis of the bladder. There was one death,—extrophy of the bladder,—intestinal obstruction.

Urologists seem to fight shy of the operation, although several have carried it out. It demands real experience in intestinal surgery. Dr. Lahey the brilliant Boston surgeon, thinks the operation belongs to the general surgeon. This is too extreme a view. He says, in discussing this, that as the retro-peritoneal space has to be dealt with, absolute aseptic surgery must be carried out or there will be a fatality. Coffey has done the operation successfully on children. I had a fatality recently from shock, one hour after operation with the Coffey technic for extrophy, upon an eighteen months old child. I believe one should wait until a child is two and one-half or three years old.

A study of the text and illustrations of Dr. Coffey's articles is necessary for a real comprehensive appreciation of his work, but it is more than worth-while and is really something of which American Surgery should be proud.

—John E. Summers, Omaha.

AMERICAN UROLOGICAL ASSOCIATION SOUTHWEST BRANCH

The Southwestern Branch of the American Urological Association held its tenth Annual Meeting in Lincoln on October 30, 31 and November 1, 1930. This meeting was attended by about 100 Urologists from Texas, Oklahoma. Missouri, Kansas, Arkansas, Colorado, Utah, and Nebraska.

The Scientific program was of exceptional interest this year in that the symposium on Intravenous Urography brought together the experiences of practically all the Urologists in this Southwestern territory on this new Urographic diagnostic adjunct. The value of Uroselectan as a diagnostic aid in the armamentarium of the urologist was substantiated.

The analytical symposium on Prostatic surgery was none the less of interest. To the credit of the Urological surgeon the mortality remains well under 5% with almost perfect end results.

Dr. O. S. Lowsley of the Brady Urological Foundation of the New York Hospital was the guest speaker at the meeting and spoke on "The Problem of the Irritable Bladder." This paper opened a wide field of discussion establishing the irritable bladder in almost all instances not as an entity per se, but irritable because of some underlying pathology and very frequently of an organic nature.

At the business meeting Dr. R. Lee Hoffmann of Kansas City was elected President, Dr. T. Leon Howard of Denver Vice-President and Dr. Arbor D. Munger of Lincoln, Nebraska, Secretary. The 1931 meeting will be held in Kansas City.

Arbor D. Munger, Sec., Lincoln.

PROCTOLOGIC HINT NO. III

A few symptoms which should suggest a rectal examination: Pain, soreness, spasm, bleeding, itching, protrusion, swelling, discharge, constipation, diarrhoea, shooting pains down the legs, urinary disturbances, anemia. altered stool, and sacral backache.

—L. E. Moon, Omaha.

HONOR TO WHOM HONOR IS DUE:

It is a very great pleasure to record the honors conferred upon two of our distinguished members during the past month. One is sometimes led to think that the members of the profession as individuals and as organized groups take too many things for granted, or as matters of course. We need to cultivate more the spirit of good fellowship and to accord to men of outstanding achievement a measure of the appreciation that is due them.

Let us invoke the muse:

DO IT NOW

"If with pleasure you are viewing any work some man is doing,
If you like him or you love him, tell him now.
Don't withhold your approbation, 'till the Parson makes oration,
As he lies with snowy lilies o'er his brow;
For no matter how you shout it, he won't really care about it,
He won't know how many tear-drops you have shed;
If you think some praise is due him, now's the time to "slip it to him,"
For he cannot read his tombstone when he's dead.

More than fame and more than money, is the comment kind and funny,
Or the hearty warm approval of a friend.
For it gives to life a savor and it makes you stronger, braver,
And it gives you heart and spirit to the end;
If he earns your praise, bestow it, if you like him let him know it,
Let the words of true encouragement be said,
Do not wait 'till life is over, and he's underneath the clover,
For he cannot read his tombstone when he's dead.
Then the joy of rightful living is not always in the giving
Of the costly gifts which break your pocket flat.
But a word of cheer when spoken is often just the token
That will mean far more than gifts. There's truth in that.
Just take out the streak of yellow, don't condemn the other fellow
If his views of life don't gibe with what you've said;
Just remember he's our brother in this world as in the other,
For he cannot read his tombstone when he's dead."

PORTRAIT OF DR. JOHN E. SUMMERS UNVEILED

A portrait of Dr. John E. Summers, a gift of medical and lay friends, was unveiled at the Clarkson hospital, Sunday, November 2, 1930, in the presence of a distinguished medical and lay audience.

The exercises were in charge of Dr. John B. Potts. Dr. Donald Macrae, Council Bluffs, spoke of the life work of Dr. Summers from intimate personal and professional acquaintanceship. Dean Poynter of the University College of Medicine spoke of student days under Dr. Summers and of his work at the College of Medicine. Bishop Shaler, on behalf of Clarkson hospital, gave an appreciation of the work of Dr. Summers at the old and the present Clarkson hospital through all the years since its organization, and accepted the portrait on behalf of the Clarkson hospital. Dr. Summers responded with some effort, starting by saying he did not know what it was all about. He gave the early history of the old Clarkson hospital and told of the handicaps in early-day surgery. The portrait which hangs on the walls of the main corridor, was painted by J. Lawrie Wallace, noted Omaha artist, and is a striking likeness of the Doctor.

DR. JOHN E. SUMMERS
(Photographic reproduction of bust of oil painting)

Dr. J. E. Summers, son of an Army Surgeon, was born at Old Fort Kearney, Nebraska, was graduated from the College of Physicians and Surgeons, New York, was an army surgeon in Wyoming, studied for two years in Vienna and other European clinics, located in Omaha in 1885 and almost at once became professor of surgery in the Omaha Medical College and has continued to teach surgery in the University College of Medicine to this date. He published The Modern Treatment of Wounds in 1899. He has been a voluminous writer on surgical subjects in various journals, among others *The Nebraska State Medical Journal*. He has been president of the Nebraska State Medical Association, the Missouri Valley Medical Association and the Western Surgical and Gynecological Society. He is generally recognized as foremost in surgical pathology in Nebraska and his influence on the generation of medical and surgical men of the middle west who have come under his influence, is inestimable.

TESTIMONIAL DINNER FOR DR. H. WINNETT ORR

The members of the Lancaster County Medical society gave a Testimonial Dinner Tuesday evening, November 4, 1930, honoring Dr. H. W. Orr, Lincoln orthopedist, on his completion of twenty-five years of service at the Nebraska Orthopedic hospital.

DR. H. WINNETT ORR

About sixty guests were present, among them Drs. J. P. Lord, R. D. Schrock, J. W. Martin and H. F. Johnson of Omaha and Dr. F. A. Long, Madison. A Testimonial Inscription bearing the names of all those present at the dinner was presented to Dr. Orr. Short talks were made by Drs. J. P. Lord and F. A. Long. Dr. Lord reviewed the history and early struggles of the Orthopedic hospital of which he was the first surgeon, with Dr. Orr as his assistant. They worked together for fifteen years. Dr. Orr made a short response.

Following the dinner Dr. Orr gave a paper before the Lancaster County Medical society on the early history of surgery in eastern Nebraska, including the organization of the Orthopedic hospital.

Dr. H. W. Orr was graduated from the medical school of the University of Michigan and came to Lincoln with the turn of the century and engaged in general practice, but with a leaning toward surgery. With the opening of the Orthopedic hospital he became assistant orthopedic surgeon to Dr. Lord. Much of his later career is well known to many members of the profession. He was chairman of the section on Orthopedic Surgery at the meeting of the American Medical Association at St. Louis, some years ago. At the outbreak of the World War he was one of a number of orthopedic surgeons loaned to the British and saw service in Wales in a reconstruction hospital and at places in France, notably the hospital at Savenay with our wounded, where he was consulting orthopedist. He returned to this country with the rank of lieutenant colonel.

In 1920 he was president of the Nebraska State Medical Association. Dissatisfied with the results obtained in the treatment of osteomyelitis and the always infected compound fractures in war and peace he developed a new method for their treatment, consisting essentially of cleaning out by "saucerization", swabbing with iodine and alcohol, packing with sterile vaseline gauze, the application of plaster of paris and infrequent dressings. In 1929 he published "Osteomyelitis and Compound Fractures". He has expounded his method before surgical audiences at Boston, New York, Chicago, the Mayo clinic and at Seattle and other Pacific coast points; gave the Beaumont Lecture on Orthopedic Surgery before the Wayne County (Detroit) Medical society, and was honor guest and lecturer before the British Surgical Association at Bristol, England, in April of this year.

HOW OLD IS OLD?

Methuselah was 969 years old when he died; the poet Chatterton only 18.

What does it mean to be old? How old *is* old, anyhow? When *are* we old?

My brother Paul is seven. He isn't old. My sister Louise is twenty-five. She isn't old either, but she seems old when compared with Paul. I am—oh well, never mind how old I am, but anyway Louise calls me an "old maid." Grandmother really ought to be old, for she is halfway between eighty and ninety; yet of us all, grandma is the youngest! She plays games with Paul. She hunts up new dishes to delight the epicurean of the family. Grandma's face is a little wrinkled; but so full of life and fun! Her eyes are somewhat faded; but keen and understanding. No, grandma isn't old; even Paul says she isn't.

Perhaps it is reduced earning capacity? American industry scraps its men and women at forty. But age doesn't necessarily have anything to do with productivity. Some of the finest things in the world came from so-called "old people". Giovanni Bellini, Michael-Angelo, Sidney Cooper, painted some of their best works just a short time before they died. Titian was painting with "incomparable steadiness of hand" until the day of his death at the age of ninety-nine. Goethe, Voltaire, Anatole France, Frederick Hanson, Littre, van Ranke, retained their creative energy unimpaired until their deaths.

Senility? Most of us loathe the prospect of continued ill-health, greatly impaired powers, loss of vitality and personality. We wouldn't mind senescence so much—normal old age with its limitations due to atrophic changes in the body. But we shudder at senility—those manifestations in the elderly of past infections and diseases. Eli Metchinikoff attributed the senile accompaniments of advanced years to pathological and preventable causes. What are pathological and preventable causes? The Encyclopedia Brittanica speaks with a voice of authority:

"The various parts of the body do not all grow old at the same time, but when these changes are much more advanced in some vital organ than elsewhere the proper harmony of the system is so disturbed that the condition becomes pathological, and then instead of a happy, healthy, pleasant old age there is the picture of incapacity, pain and misery."

So we needn't be old after all! How can we prevent senility? Most of us exercise too little, get insufficient rest, live too hard and fast, drink too little water, eat too much, do not recognize or correct disease until it has become chronic and almost incurable. Yet from time immemorial our sages have been trying to teach us differently. Some of the most famous sayings in the world are simply rules for retaining health and increasing pleasurable longevity. Statisticians say that the majority of centenarians eat sparingly. Montaigue writes: "Man does not die, he kills himself." And don't you remember that passage of Cicero: "Nature has lent us life at interest, like money, and has fixed no day for its payment"? And Cowper's couplet runs:

> "Men deal with life as children with their play,
> Who first misuse, then cast their toys away."

Nowadays it is not considered the most effective means to preach the building of positive health and prolonging life by maxim or couplet. The present age demands precise and organized work, such as medical research, the maintenance of hospitals, sanatoria and clinics, and also the education of children in the schools. Such definite measures as these appeal to the practical American mind—and it is just this type of work which is financed by the annual sale of Christmas seals in the fight against tuberculosis. The effectiveness of this present-day mode of promoting a healthy, long life and fighting disease is evidenced by the gradually diminishing death rate of tuberculosis during the two and a half decades in which this method has been used. The results are encouraging. However, tuberculosis still kills more persons between the ages of 18 and 40 than any other ailment. It is still the outstanding preventable, but as yet not wholly prevented, disease problem.

The Christmas Seal Campaign, under the sign of the double-barred cross, fights disease, establishes the means to promote good health, points the way to healthy old age. It preaches a gospel of sunshine, fresh air, rest and nourishing food, both as preventive and curative agents. "Medicine out of the earth, the sky, the sea, makes getting well a pleasure, and keeping young and vivid almost automatic."

—Nellie W. Dearstyne,
% Christmas Seal Sale.

NOTHING SO SURE

Reporter: "To what do you owe your ninety years?"

Oldest Inhabitant: "Long life—long life."

Dear Reader:

The Journal and the Cooperative Medical Advertising Bureau of Chicago maintain a Service Department to answer inquiries from you about pharmaceuticals, surgical instruments and other manufactured products, such as soaps, clothing, automobiles, etc., which you may need in your home, office, sanitarium or hospital.

We invite and urge you to use this Service.

It is absolutely free to you.

The Cooperative Bureau is equipped with catalogs and price lists of manufacturers, and can supply you information by return mail.

Perhaps you want a certain kind of instrument which is not advertised in the Journal, and do not know where to secure it; or do not know where to obtain some automobile supplies you need. This Service Bureau will give you the information.

Whenever possible, the goods will be advertised in our pages; but if they are not, we urge you to ask the Journal about them, or write direct to the Cooperative Medical Advertising Bureau, 535 N. Dearborn St., Chicago, Illinois.

We want the Journal to serve you.

EDITORIAL PARAGRAPHS

The Abbott Laboratories, Chicago, and the Swan-Myers Company, Indianapolis, have consolidated.

The next meeting of the American Medical Association is scheduled for June 8-12, 1931, at Philadelphia.

The Supreme Court of Minnesota in the case of State of Minnesota vs. Broden has upheld the constitutionality of the basic science law.

The first man to practice medicine at Hastings was a Doctor Morgan who located in 1873. Hastings now has about 35 regular physicians.

If the laws were as well enforced generally as was the one pertaining to pheasant hunting this fall, we would have little about which to complain.

The writer has observed that men in the profession who are dynamic and do things worth while, sometimes inadvertantly step on others toes and leave bruises.

Dr. Allen B. Kanavel, Chicago, was recently elected President-elect of the American College of Surgeons. Doctor Kanavel is a protege of Dr. Franklin H. Martin, Director-General of the College.

It is a great pleasure to note that Dr. Morris Fishbein, Editor, *Journal A. M. A.*, and his wife, who were victims of a severe auto accident while motoring September 5, last, have made good recoveries.

The nomenclature relative to meningococcus meningitis has been changed several times, the disease having been variously designated cerebrospinal meningitis, epidemic meningitis, and other similar terms.

During September and October of this year, 227 cases of poliomyelitis occurred in Nebraska, of which the largest numbers occurred in Adams and Hall counties, 12 and 13, respectively. Cases were reported from 46 counties.

The Nobel Prize in Medicine for 1930 was awarded to Dr. Karl Landsteiner of the Rockefeller Institute for Medical Research. Dr. Landsteiner does work in immunology, pathology and bacteriology. He was the originator of blood grouping.

Average lay psychology is well illustrated by the vote cast for Brinkley, the Kansas quack whose license was revoked, for governor of Kansas. He polled 180,000 votes running independently while the winning candidate polled something over 200,000.

It is understood that the Nebraska Public Health association, organized by Dr. W. H. Wilson, then chief, bureau of health, several years ago under promising auspices, has, for want of sustained interest, suspended and the small amount of cash on hand was given to the Nebraska Tuberculosis association.

A story was told the other day about a practitioner outstate in Michigan, who had the reputation of being a very busy man and an outstanding man in the profession, who, when called on by an official of the state society, explained his crowded waiting room by saying that he was unusually busy that day because Thursday was Insulin Day—all the diabetics came in for their weekly dose of insulin!

A medical man has been elected to the board of regents of the State University, which is occasion for much rejoicing. Three attorneys are on the board now and with a medical department a part of the University it is eminently proper that there should be medical representation in that body. The large majority given Dr. A. C. Stokes reflects the intense interest in the campaign, but in no wise reflects on the worth of his opponent.

A physical examination of all students of Creighton university is being made. The examination, a part of the modern movement of preventative medicine, includes seven different tests. All small deviations from the normal in each student are recorded, and a report is made to each student examined, telling the defects found in the individual in the examination. The examinations are also conducted, according to Dr. von W. Schulte, dean of the Creighton medical school, to give the individual students a knowledge of what a thorough medical examination is.

In a case brought before the department of public welfare, a physician having been accused of drunkenness and moral turpitude, which appears was admitted; but the accused having plead for another chance, the decision of Secretary was as follows: His license to practice medicine will be suspended for 60 days beginning Nov. 1 and terminating Dec. 31, Pollard ordered, and within 10 days, the physician is to enter an institution to take the alcoholic cure. From Dec. 31, 1930, to Dec. 31, 1931, he will be on probation and during this period if Pollard is presented with true evidence that the doctor has used intoxicants, his license will be revoked.

At the meeting of the Nebraska Creamery Association at Madison, a month ago. a representative of the National Dairy Board stated that a year ago at one time there were 40,000,000 pounds of butter on hand and the price accordingly fell 10 to 12 cents a pound; that if every person in the United States used but one additional tablespoonful of milk each day, a surplus would not have occurred. Further, if every adult used the equivalent of the usual pat of butter daily in addition to what is used, there would not be a surplus. He also regretted the fact that many farmers sell cream and buy oleomargarine for home consumption, thus depressing the price of butter in their effort to economize at home. Truly economics is an interlocking affair and we often kill the goose that lays the golden egg.

During the past ten years, 65 lepers have been discharged from the National Leprosarium at Carville, La., as apparently recovered from leprosy and no longer a menace to the public health. The average period of hospital care varied from 5 to 9 years. The shortest period of treatment was 1½ years and the longest was 17 years. Fifty-five of these patients received crude chaulmoogra oil by mouth, and sixteen of this group received no other medicine. Twelve received benzocaine-chaulmoogra oil by intramuscular injection, and four of these received no other medical treatment. Twenty-one received the ethyl esters of chaulmoogra oil by intramuscular injection, and eight of these received no other medicine. The basic treatment of leprosy is similar to that for tuberculosis, and all lepers at the National Leprosarium, no matter what medicines are given, follow a sanatorium regimen of food, fresh air and rest; almost identical with that prevailing in a tuberculosis hospital.

A clinic for crippled children was featured at York by the county societies of York, Saline, Fillmore, Hamilton and Polk counties in conjunction with the Nebraska State Elks. The Elks program is:

"First—Conduct clinics in cooperation with local medical resources in the various jurisdictions for the purpose of enabling crippled children to be examined so as to ascertain definitely whether they may or may not be helped physically. It is hoped to make this service sufficiently extensive that every crippled child in Nebraska will have an opportunity for orthopedic examination and diagnosis. In the development of a program for needed operative service, hospitalization, convalescent care and after care in the home, no existing service or activities will be duplicated. It is planned to make full use of existant hospital facilities and in addition to develop orthopedic departments in local hospitals in each jurisdiction as needed. This will relieve the congested condition in the State Orthopedic Hospital at Lincoln, the State University Hospital Orthopedic Department at Omaha and the Hattie B. Monroe Crippled Children's Convalescent Hospital at Omaha.

"Second—Develop facilities for the education of the crippled children of school age who are unable to compete in regular classroom courses by arranging special classes, home study courses, instruction in hospitals or convalescent homes as they may be required.

"Third—Provide vocational guidance and training, conduct vocational clinics required for the individual case.

"Fourth—Obtain institutional care for the mentally deficient cripples who are in need of it.

"Fifth—Provide special care and recreational activities for those who are hopelessly helpless but who are not mentally deficient."

THIS MONTH IN MEDICAL HISTORY
DECEMBER, 1930

In the period about 1730, in England, successful physicians were very well paid for their services. The famous Richard Mead (1673-1754) who succeeded Radcliffe in his practice, made as much as seven thousand pounds in one year. Radcliffe (1682-1771) had averaged five to six thousand pounds a year. Morgagni (1682-1771) was paid a salary equal to about $4,500.00 a year as a professor at Padua. Thomas Dinsdale, who went to Russia to inoculate Queen Catherine and her son, received $50,000.00 with $10,000.00 additionl for traveling expenses and a pension of $2,500.00 for life.

One hundred and fifty years ago (1780) in his "Clinical Experiments" published in Edinburgh, Francis Home described the yeast test for glycosuria.

From 1721 to 1730, just two hundred years ago, the early medical men of the American colonies were writing pamphlets about and endeavoring to popularize inoculation for the prevention of small pox. Among these were Benjamin Coleman, Isaac Greenwood, Motton Mather, William Douglass and Zabdiel Boylston.

Fracastorius (1484-1553), a physician, poet, physicist, geologist and astronomer, published in Venice, in 1530, his famous poem "Syphilis sive morbus Gallicus". In this poem he recognizes the venereal cause of the disease, gave it its present name and describes the treatment employed at that time. Fracastorius shared with Leonardo da Vinci the honor of having first recognized, in 1530, the significance of fossil remains.

Following the discovery of oxygen, in 1772, Thomas Beddoes (1760-1808) with Humphrey Davy for an assistant and James Watt as designer of apparatus, in 1798 opened a pneumatic institute at Clifton for the treatment of disease by inhalation.

In 1730 the first Alexander Munro, and in 1830 the third were teaching anatomy at Edinburgh. The three Monros taught there for 126 years: 1720-1846. Alexander Munro primus was trained in London, Paris and Leyden and was a friend of Cheselden and Boerhaave. He became professor of anatomy at the age of 22.

Fredrich Hoffman published the first description of chlorosis in his work "De genuina chlorosis in dole", 1730.

Seeing that the stork now comes to hospitals instead of the home, the old adage is doubly true that "it's a wise child who knows its own parents."

NECROLOGY

Andrew B. Somers, Omaha; native of Greensboro, Vermont; College of Physicians and Surgeons, New York, 1872; practiced in a small town in Vermont for 15 years after graduation; located in Omaha in December, 1887; from which time on he was fairly active until advanced years compelled retirement a few years ago; was health commissioner and city physician of Omaha, 1892-93; member state board of health, 4 years; surgeon and physician, American Smelting and Refining Company for thirty years; charter member and an ex-president, Missouri Valley Medical Society; an outstanding member, Nebraska State Medical Association since 1889; consulting surgeon of the Union Pacific at one time and was delegated to accompany President E. H. Harriman, suffering from appendicitis to New York on a special train; from 1896 to 1900 taught Internal Medicine in Creighton Medical College; was professor of Obstetrics in the Omaha Medical College and its successor, the University College of Medicine, 18 years; and did some special postgraduate work in New York city before assuming the duties of the latter position; a man of the highest character and a friend of man; died October 23, 1930, aged eighty-three years. He is survived by a widow.

David A. Rundstrum, Curtis, Nebr.; Nebraska University College of Medicine, 1902; practitioner at Curtis for 13 years; member, Nebraska State Medical Association; was found dead in his garage overcome by carbon monoxide gas, October 20, 1930, aged fifty-two years. Surviving are a widow and four children.

Louis Z. Skinner, Loudonville, Ohio; Baltimore Medical College, 1894; practitioner at Johnson, Nebr., from 1907 to 1910, and at Harvard, Nebr., from 1910 to 1915; in practice at Loudonville, Ohio, for the past fifteen years; died after a long illness, October 10, 1930, aged sixty-three years.

NEBRASKA STATE FAIR HEALTH PROGRAM, 1930

A Health Education Program was given by the Nebraska State Medical Association at the Nebraska State Fair, August 29 to September 5, 1930. Periodic health examinations were given to one hundred ninety-nine adults, and four hundred twelve babies and children.

Of the one hundred ninety-nine adults examined (59 males, 140 females) ninety-one per cent were found to have defects in need of medical attention.

The following is a list of defects, or organs found to be defective:

Teeth	54
Tonsils	47
Nutrition	28
Heart	24
Gums	24
Tender abdomen	22
Constipation	20
Thyroid	18
Lungs	16
Nose	15
Blood pressure	15
Hemorrhoids	15
Focal infection	14
Urine	14
Sinus	13
Blood	13
Gallbladder	12
Varicose veins	11
Neurosis	11
Ears	10
Hernia	10
Uterus	10
Lacerated perineal	10
Flat feet	9
Tumor	8
Skin	8
Eyes	7
Posture	7
Vaginal discharge	7
Kidney	6
Appendix	6
Liver	4
Prostate	4
Male genitalia	4
Back	3
Epithelioma	2
Probable T. B.	2
Vincents infection	1
Aortic aneurism	1
Paralysis	1
Venereal	1
Total	507

Of the four hundred twelve babies and children examined (201 males, 211 females) eighty per cent were found to have defects in need of medical attention. The following is a list of defects, or organs found to be defective.

Tonsils	155
Teeth	148
Nutrition	90
Genitalia	87
Skin	86
Distended abdomen	73
Adenoids	65
Asymmetrical chest	55
Nose	40
Knock knee	41
Neck glands	39
Beaded ribs	36
Flabby muscles	36
Head	35
Mouth	32
Flat feet	31
Back	30
Posture	24
Enlarged epiphysis arms	24
Enlarged epiphysis legs	21
Hernia	19
Bow legs	19
Hair	16
Fontanel	15
Defective training	11
Heart	10
Irregular features	9
Lungs	6
Anemia	5
Diseased scalp	5
Total	1,263

Of the four hundred twelve babies and children examined sixty-three had been vaccinated, and only fifty-seven had received toxin anti-toxin.

One hundred nine people were tested for loss of hearing with an audiometer. The average was 9% hearing loss.

—E. R. Hays, Chairman.

THE SOCIETIES

The **Fifth Councilor District Medical Society** meeting was held at Oakland, November 6, under the councilorship of Dr. Morris Nielsen.

The following is the program of the meeting:

Dr. Lucien Stark, Norfolk, "The Diagnosis and Treatment of Undulant Fever"; Dr. J. J. Keegan, Omaha, "Diagnosis and Treatment of Anterior Poliomyelitis"; Dr. Frank Conlin, Omaha, "The Pathogenesis of Ulcer"; Dr. W. A. Cassidy, Omaha, "The Acute Ear"; Dr. C. A. Roeder, Omaha, "A New Structural Classification of Goitre"; Dr. W. L. Shearer, Omaha, "Surgery of the Jaws."

Dinner at 6:00 o'clock p. m.

After dinner speakers: Dr. C. W. M. Poynter, Dean, College Medicine, "The University Hospital"; Dr. P. H. Bartholomew, Director of State Bureau of Health, "Responsibility of the Medical Profession in the Management of Communicable Diseases."

Undulant fever came in for a splendid discussion. The concensus of opinion was that diagnosis should be made only with a clear history, supplemented with an agglutination titer above 300. Treatment varied with individuals, Dr. Stark having had best results with gentian violet.

The paper on Poliomyelitis by Dr. Keegan stressed diagnosis and treatment. Justification for spinal tap was clearly outlined; cytology of fluid and cellular elements enumerated, with the distinctive type of cells found. Treatment with convalescent serum in the preparalytic stage based on a positive diagnosis offers the most hope. Owing to the difficulty of obtaining convalescent serum and the urgent demand of it, the supply should be controlled.

Dean Poynter gave a very clear outline of the functions and activities of the University hospital; recounted some of the difficulties encountered in its administration, touched on "Whither are We Bound" in Medicine.

Dr. Bartholomew sketched the structure of the law under which public health is administered in this state, called attention to our duty as doctors to be leaders in every activity whether organized as lay or professional bodies; our duty to activity urge and promote every effort to encourage preventive measures.

Space forbids further comment on a most excellent program.

—H. W. Benson, Oakland.

The **Dodge County Medical Society** held its October meeting at the Hotel Pathfinder, Fremont, on the 28th, following a dinner which was attended by the ladies of the Auxiliary. Dr. H. C. Pedersen, gave an illustrated lecture on "Injuries of the Extremeties".

The **Saline County Medical Society** met at Tobias, Oct. 30th, Dr. A. C. Blattspieler acting as host. He invited thirty of his medical friends to a roast wild duck dinner. Each doctor was served with a roasted wild duck, besides the menu that usually goes with a banquet. Dr. John Thompson gave a paper on "Treatment of Various Gastro Intestinal Disorders"; Dr. Harry Everett on "Basic Anesthesia in Surgery, Especially in General Practice"; and Dr. W. O. Colburn a paper on "Acute Anterior Poliomyelitis". The doctors voted that Dr. Blattspieler was a prince of a good fellow, as every person knows, and a host second to none.

At a meeting of the **Custer County Medical Society** at Broken Bow, October 14, Dr. C. L. Mullins was elected president; Dr. L. W. Forney, Mason City, secretary. Dr. L. W. Forney gave a talk on Tularemia; Dr. F. A. Burnham spoke on Skin Diseases and Dr. C. L. Mullins gave the history of the Custer County Medical Society.

The **Colfax County Medical Society** was held at the Kolouch hospital Schuyler, November 13. Dr. S. B. Koory, Schuyler, was elected president, Dr. W. J. Kavan, Clarkson, secretary-treasurer. A round table discussion of Poliomeyelitis was held.

The **North-West County Medical Society** makes its debut: On November 12 the doctors of Dawes county and the surrounding territory met at Chadron, 8 p. m., for the purpose of organizing a local medical society and become affiliated with the State Association.

Dr. A. L. Cooper, councilor of the Twelfth District, and Dr. W. C. Harvey, secretary of the District

Society, and Dr. F. B. Young, of Gering, met with them.

After a program consisting of an illustrated lecture on "Some Aspects of Paleopathology", by Dr. Young and Dr. Cooper, the Society was organized and officers elected for the coming year, as follows:

President, Dr. M. B. McDowell, Chadron.

Vice-President, Dr. F. W. Vaughn, Hay Springs.

Secretary-Treasurer, Dr. Harry Vanderkamp, Chadron.

Censors: Dr. W. H. Priest, Harrison; Dr. Peter L. Benthack, Chadron; Dr. John S. Broz, Rushville.

Delegate, to be named later.

The name North-West Nebraska County Medical Society was selected and meetings are to be held monthly, the second Wednesday of the month at 8 p. m.

This completed the county organization of the Twelfth District, making four local societies, centered about Scottsbluff, Alliance, Sidney and Chadron, so that all doctors of the district are now in easy reach of their County Medical society.

—A. L. Cooper.

The regular monthly meeting of **The Cheyenne-Kimball County Medical Society** was held in Sidney, Nov. 14th, 1930. Dr. A. L. Miller, Kimball, President of the Society, presiding. Dr. Dee L. Abbott, Sidney, read a paper, "Anaphylaxis", discussed by Drs. J. R. Taylor, Sidney, and A. L. Miller, Kimball.

Dr. J. B. Pankau, Dalton, presented a paper, "The Treatment of Pneumonia", discussed by Drs. E. L. Rolph, Kimball, and Dr. Everett, Kimball.

There was a very good attendance of the members and all enjoyed the sumptuous lunch served by Dr. Abbott.

—J. B. Pankau, Sec'y.

The **Madison Five County Medical Society** meeting for November was held at Norfolk on the 18th. Sixty members and their ladies partook of a turkey dinner preceding the scientific program.

Dr. Roy Fouts, Omaha, Chairman Medical Defense committee of the State association, gave a comprehensive account of the work of the Medical defense committee, of malpractice suits brought in this state and of suits threatened and cases settled out of court. Most suits are instigated by unfortunate remarks made by members of the medical profession about the progress or results of cases treated by another physician—usually by rivals rather than by confreres. He also spoke of the working of the Workman's Compensation law.

Dr. W. B. Wherry, Omaha, spoke on Acute Otitis Media. Myringotomy can be done painlessly if the ear is first packed with a pledget of cotton saturated with a mixture of crystals of carbolic acid, menthol and cocaine which liquify on mixing, the application to be left one hour before incising the drum. Loosely packed iodoform or formalin gauze is used for dressing and if pain does not remain a factor, is left in situ for a week when, usually the ear is well.

HUMAN INTEREST TALES

Dr. J. B. Pankau, Dalton, has opened a hospital.

Dr. C. L. Egbert has opened an office at Hastings.

Dr. C. A. Hull, Omaha, has passed through a serious siege of pneumonia.

Dr. S. M. Weyer, for the past eight years at Wakefield, has moved to Ogallala.

Dr. Everett, Kimball, has just returned from a few weeks vacation spent in California.

The Nebraska Medical Women's association held a meeting at the Paxton hotel, Omaha, November 8.

Dr. H. M. Hepperlin, Beatrice, is at home convalescing from a serious operation undergone in Omaha, this fall.

Dr. A. G. Sheets, formerly located at Fairfield, Idaho, has located at Wakefield in succession to Dr. S. M. Weyer.

It is a pleasure to note that Dr. H. C. Sumney, Omaha dermatologist, has recovered from a prolonged illness.

Dr. and Mrs. Russel Best have returned to Omaha after eighteen months spent in different parts of Europe in study.

Dr. and Mrs. J. A. Johnson, Omaha, have gone to Europe for a six months period of study at Vienna and other points.

Dr. E. K. Hirsch, formerly of Superior, has become a part of the McKowen-Hirsch-McGehee clinic at Baton Rouge, La.

St. Joseph's hospital celebrated its golden jubilee with a banquet at which Dr. J. P. Lord reviewed the history of the hospital.

Dr. Earl M. Engel, former Ponca boy, is associated with six other medical men in a clinic at Wyandotte, Mich. He is the surgeon.

Dr. and Mrs. R. S. Johnson, Kearney, motored through the South and took a side trip to Havana, where they spent two weeks.

The Gifford Clinic in Omaha announces that Dr. William H. Stokes, formerly of Dallas, Texas, is now associated with the clinic in Ophthalmology.

Dr. and Mrs. J. P. Lord, Omaha, have started on a trip around the world. They sailed from Los Angeles. They will return to Omaha about June first, 1931.

Dr. H. B. Mueller, Lincoln physician, and native of Germany, gave an illustrated talk before the Cosmopolitan club, on war from the German lines, recently.

The Nu-Med society of premedic students of the State University was addressed by Dr. Elmer Hansen at the Grand Hotel, Lincoln, on "Obstetrics in Relation to the General Practitioner".

Dr. John H. Musser, professor of medicine at Tulane university, New Orleans, spoke before the Omaha-Douglas County Medical society and the college of medicine the latter part of October.

Dr. Victor E. Levine, Omaha, October 28th, addressed the Cerro Gordo County Medical Society at Mason City, Iowa. His subject was: Newer Viewpoints and Methods in the Treatment of Acidosis.

Dr. J. H. Matthai, Superintendent of the Nebraska Orthopedic hospital, following the disclosure that he is not licensed to practice in the state, has resigned. It appears he thought it unnecessary since he was a member of the staff of the hospital.

Dr. L. H. Webb has been appointed and has taken charge of the U. S. Veteran's hospital at Lincoln. He was formerly in charge of Veteran's hospital No. 84, at Algiers, La. It is understood that the hospital will be ready to receive patients January first next.

Curtis, a place of 1,000 people, seat of a Branch of the Nebraska School of Agriculture, is said to offer a good field for another physician. One of the two physicians resident there has just died. It is thought that the presence of the agricultural schools, calls loudly for more than one physician and for hospital facilities.

BOOKS REVIEWED

NEW AND NONOFFICIAL REMEDIES, 1930. Cloth. Price, $1.50. Pp. 481; xlviii. Chicago: American Medical Association, 1930.

The present edition contains all of the features that have in the past made New and Nonofficial

PHILADELPHIA

Remedies such a reliable and efficient a guide to the physician who wishes to inform himself on the newer medicinal preparations; logical classification of preparations, with authoritative articles on each class; complete and carefully written descriptions of preparations; elaborate indexes; and a useful cumulative list of references to the literature on articles not accepted by the Council. Among the more important revisions that appear in this edition are those of the general articles, Barbital and Barbital Compounds, Digestive Enzymes, Cod Liver Oil and Cod Liver Oil Preparations, Ovary, Pituitary Glad, Radium and Radium Salts, and Serums and Vaccines. Among the new preparations descriptions of which appear for the first time in this edition are: Bismarsen, which is sulpharsphenamine bismuth; Dial-Ciba, which is diacetylbarbituric acid; Calcium Gluconate-Sandoz, a more palatable and less irritating preparation of calcium; Atoquinol-Ciba, a cinchophen derivative; Pitocin and Pitressin, solutions respectively of the oxytocic and pressor principles of the pituitary gland; Viosterol (the Council name for irradiated ergosterol) in the forms of Viosterol in Oil 100 D, which is irradiated ergosterol dissolved in vegetable oil, and Cod Liver Oil with Viosterol 5 D, which is cod liver oil with its vitamin D potency enhanced by addition of viosterol. While these new preparations (with the possible exception of Viosterol) do not constitute major additions to the physician's armamentarium, each one gives promise of relative usefulness, and the physician who desires to keep abreast with the progress of therapeutics will familiarize himself with them as well as with the many other new preparations described in this valuable book.

ANNUAL REPRINT OF THE REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR 1929. With Comments that have appeared in THE JOURNAL. Cloth. Price $1. Pp. 81. Chicago: American Medical Association, 1930.

This is the volume in which the Council annually collects the reports on articles found unacceptable during the year. This edition contains also several interesting preliminary reports on preparations which show promise but for which the evidence is not yet sufficient to justify acceptance by the Council. Reports are given on the following products rejected by the Council: Anayodin, claimed to be iodoxyquinolinolin sulphonic acid (chiniofon) but marketed under a noninforming name without adequate statement of composition and with unwarranted therapeutic claims; Antiustio, an unscientific mixture marketed under a nondescriptive name with unwarranted therapeutic claims; Kerasol and Keraphen, unoriginal products marketed under non-informing names; Sodiphene, an unoriginal alkaline phenol preparation marketed under a proprietary name with unwarranted therapeutic claims; Borocaine, procaine borate under a proprietary name; Quicamphol (Transpulmin), a quinine preparation for intramuscular injection in the treatment of lobar pneumonia; Toxogon, a preparation of inadequately declared composition marketed under a therapeutically suggestive name; Intramuscular Iron Arsenic Comp. (No. 201) and (Intravenous) Iron Cacod. and Gylcerophosphate (No. 202), two irrational and unscientific mixtures exploited with emphasis on the numbers. Other rejected products are: Ovoferrin, Tamerici Salts, Elixir Kacyan-McNeil, and Tablets Kacyan-McNeil. An authoritative article on serum disease and serum accidents by MacKenzie and Hanger is of considerable interest and timely importance.

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THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. XV Norfolk, Nebraska, January, 1930 No. 1

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[1] *J. Biol. Chem., 76:2.* [2] *Ibid., 66:451.* [3] *Ibid., 80:15.* [4] *Ibid., 76:251.*

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Vol. XV Norfolk, Nebraska, December, 1930 No. 12

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